Physical examination measurements

BRHS 40 year follow-up (Q40)

2018-2019

In 2018–2019, BRHS participants underwent a 40-year follow-up physical examination. A total of 667 men aged 78 to 96 years attended the examination, representing a 41% response rate. Clinical assessments were conducted by trained research staff, including a nurse, oral hygienist, and phlebotomist. These assessments included measurements of anthropometry, blood pressure, lung function, physical function, dental health, body composition, and fasting blood sample collection. New measures introduced at this follow-up included extended objective assessments of oral health and additional anthropometric measurements related to lower-body extremity muscle mass.

NOTE – Body composition measurements
Due to issues with data inputs into the Tanita body composition analyser, the integrity of the body composition measurements/outputs was compromised. As a result, the data is not being made available.

Reference

Cohort Profile

The British Regional Heart Study 1978–2018: 40 years of follow-up of older British men. Kimble R, McLellan G, Lennon LT, Papacosta AO, Mathers JC, Wannamethee SG, Whincup PH, Ramsay SE. International Journal of Epidemiology, 2022, 1–8. https://doi.org/10.1093/ije/dyac122

Contents

i. A table showing the list of measurements taken during the physical examination, in the order they were recorded.

   The columns in the table give:

   a. A description of each measurement
   b. The assigned BRHS database variable name
   c. Value labels/units for each variable
   d. a reference to the relevant (methods) section in the physical examination measurements and procedures protocol which describes in detail how the measurements were made. **(BRHS 2018-19 (Q40) 40yr follow-up Physical examination protocol.pdf)**
   e. Indication whether data access is available for each data variable.

ii. Sections 5.0 to 7.3.3 extracted from the full 40 year follow-up physical examination protocol **(BRHS 2018-19 (Q40) 40yr follow-up Physical examination protocol.pdf)** which describe in detail the procedures for each measurement listed.

Appendices

Appendix 1: BRHS 2018-19 (Q40) Physical examination Data Collection form /datasheet

List of measurements

PHYSICAL EXAMINATION 2018-19 (Q40) List of measurements in the order these were carried out				
Description	**Units/Category labels**	**Protocol section**	**BRHS Variable name**	**Data access**
BRHS serial number			serial	
BRHS batch number			q40batch	
Workstation 1				
Station 1 observer Initials	DA, EA, EK		q40ST1_obs	yes
Time of examination(hour)	Hour		q40st1_hour	yes
Time of examination(minutes)	Minutes		q40st1_min	yes
Reason Chair rise (5 times) task not performed	1=refused, 2=disability	5.3.1	q40Chair_if_no	yes
Time(seconds) taken to perform 5 chair rises - note: task stops at 30 seconds	seconds	5.3.1	q40Chair_secs	yes
If test not completed within 30 seconds - Number of completed chair rises in < 30 seconds	number	5.3.1	q40Chair_N	yes
Participant used hands during chair rise task	1=yes	5.3.1	q40Chair_hands	yes
Reason Gait speed (walk 3 meters) task not performed	1=refused, 2=disability	5.3.2	q40Gait_if_no	yes
Time(seconds) taken to perform 3m walking task	seconds	5.3.2	q40Gait_secs	yes
Participant used walking aid	1=yes	5.3.2	q40Gait_aid	yes
Participant did not complete task at 30 secs	1=yes	5.3.2	q40Gait_inc30	yes
Calf circumference(cm)	cm	5.3.3	q40Calf1	yes
Problem with calf measurement	1=P, 2=T	5.3.3	q40Calf_prob	yes
Waist circumference - measurement 1	cm	5.3.4	q40waist1	yes
Waist circumference - measurement 2	cm	5.3.3	q40waist2	yes
Waist circumference - problem	1=P, 2=T, .=No problem	5.3.4	q40waist_prob	yes
Hip circumference - measurement 1	cm	5.3.5	q40hip1	yes
Hip circumference - measurement 2	cm	5.3.5	q40hip2	yes
Hip circumference - problem	1=P, 2=T	5.3.5	q40hip_prob	yes
Arm circumference	cm	5.3.6	q40armc	yes
Arm circumference - problem	1=P, 2=T, .=No problem	5.3.6	q40armc_prob	yes
Triceps skinfold - measurement 1	mm	5.3.7	q40tricep1	yes
Triceps skinfold - measurement 2	mm	5.3.7	q40tricep2	yes
Triceps skinfold - problem	1=P, 2=T, .=No problem	5.3.7	q40tricep_prob	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Subscapular skinfold - measurement 1	mm	5.3.7	q40subsacp1	yes
Subscapular skinfold - measurement 2	mm	5.3.7	q40subsacp2	yes
Subscapular skinfold - problem	1=P, 2=T, .=No problem	5.3.7	q40subscap_prob	yes
Cuff size used for taking BP (1=small, 2=medium, 3=large)	1=(arm circumference < 22 cm) 2=(arm circumference 22-32 cm) 3=(arm circumference >32 cm)	5.3.8	q40BP_cuff	yes
Blood pressure instrument	1 or 2	5.3.8	q40BP_instr	yes
Blood pressure measuring problem	1=P, 2=T	5.3.8	q40BP_prop	yes
Systolic (mmHg) - sitting measurement 1	mmHg	5.3.8	q40SBPsit1	yes
Systolic (mmHg) - sitting measurement 2	mmHg	5.3.8	q40SBPsit2	yes
Diastolic (mmHg) - sitting measurement 1	mmHg	5.3.8	q40DBPsit1	yes
Diastolic (mmHg) - sitting measurement 2	mmHg	5.3.8	q40DBPsit2	yes
Heart Rate (per min) - sitting measurement 1	per min	5.3.8	q40HRateSit1	yes
Heart Rate (per min) - sitting measurement 2	per min	5.3.8	q40HRateSit2	yes
Room temperature(^{0}C)	degrees Celsius	5.3.8	q40Room_temp	yes
Ethnicity	1=White/European 2=Black Afro Caribbean 3=South Asian 4= Ch/J/O 5= Other	5.3.8	q40Ethnicity	yes
Grip strength Instrument	1,2	5.3.9	q40Grip_instr	yes
Grip strength (Right hand) kg measurement 1	kg	5.3.9	q40Grip_r1	yes
Grip strength (Right hand) kg measurement 2	kg	5.3.9	q40Grip_r2	yes
Grip strength (Right hand) kg measurement 3	kg	5.3.9	q40Grip_r3	yes
Grip strength: Is the Right hand the Dominant hand?	1=yes	5.3.9	q40Grip_Rdom	yes
Grip strength (Right hand) measurement problem	1=P, 2=T	5.3.9	q40Grip_RProb	yes
Grip strength (Left hand) kg measurement 1	kg	5.3.9	q40Grip_l1	yes
Grip strength (Left hand) kg measurement 2	kg	5.3.9	q40Grip_l2	yes
Grip strength (Left hand) kg measurement 3	kg	5.3.9	q40Grip_l3	yes
Grip strength: Is the Left hand the Dominant hand?	1=yes	5.3.9	q40Grip_Ldom	yes
Grip strength (Left hand) measurement problem	1=P, 2=T	5.3.9	q40Grip_LProb	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Workstation 2 Dental assessment				
Station 2 observer Initials	RE	6.3	q40ST2OH_obs	yes
Reason no dental examination was performed	1=refusal 2=unable to open mouth 3=other	6.4	q40st2_no_exam	yes
Wears an UPPER denture?	1=Yes, 2=No, 3=Yes/Not worn	6.4.1.1	q40wears_dent_upr	yes
Wears UPPER Full denture?	1=Yes, 2=No, 3=Yes/No t worn	6.4.1.1	q40full_dent_upr	yes
Wears UPPER Partial denture?	1=Yes, 2=No, 3=Yes/Not worn	6.4.1.1	q40part_dent_upr	yes
Wears UPPER Implant retained denture?	1=Yes, 2=No, 3=Yes/Not worn	6.4.1.1	q40impl_dent_upr	yes
Wears UPPER Complete overdenture?	1=Yes, 2=No, 3=Yes/Not worn	6.4.1.1	q40compl_ov_upr	yes
UPPER Denture/s examined?	1=Yes, 2=No, 3=Yes/Not worn	6.4.1.1	q40dent_ex_upr	yes
Wears an LOWER denture?	1=Yes, 2=No, 3=Yes/Not worn	6.4.1.1	q40wears_dent_lr	yes
Wears LOWER Full denture?	1=Yes, 2=No, 3=Yes/No t worn	6.4.1.1	q40full_dent_lr	yes
Wears LOWER Partial denture?	1=Yes, 2=No, 3=Yes/Not worn	6.4.1.1	q40part_dent_lr	yes
Wears LOWER Implant retained denture?	1=Yes, 2=No, 3=Yes/Not worn	6.4.1.1	q40impl_dent_lr	yes
Wears LOWER Complete overdenture?	1=Yes, 2=No, 3=Yes/Not worn	6.4.1.1	q40compl_ov_lr	yes
LOWER Denture/s examined?	1=Yes, 2=No, 3=Yes/Not worn	6.4.1.1	q40dent_ex_lr	yes
Partial denture(s) presence of tooth on UPPER 18	1 = Tooth replaced on partial denture . = Teeth not replaced by partial dent	6.4.5.2	q40part_dent_U18	yes
Partial denture(s) presence of tooth on UPPER 17		6.4.5.2	q40part_dent_U17	yes
Partial denture(s) presence of tooth on UPPER 16		6.4.5.2	q40part_dent_U16	yes
Partial denture(s) presence of tooth on UPPER 15		6.4.5.2	q40part_dent_U15	yes
Partial denture(s) presence of tooth on UPPER 14		6.4.5.2	q40part_dent_U14	yes
Partial denture(s) presence of tooth on UPPER 13		6.4.5.2	q40part_dent_U13	yes
Partial denture(s) presence of tooth on UPPER 12		6.4.5.2	q40part_dent_U12	yes
Partial denture(s) presence of tooth on UPPER 11		6.4.5.2	q40part_dent_U11	yes
Partial denture(s) presence of tooth on UPPER 21		6.4.5.2	q40part_dent_U21	yes
Partial denture(s) presence of tooth on UPPER 22		6.4.5.2	q40part_dent_U22	yes
Partial denture(s) presence of tooth on UPPER 23		6.4.5.2	q40part_dent_U23	yes
Partial denture(s) presence of tooth on UPPER 24		6.4.5.2	q40part_dent_U24	yes
Partial denture(s) presence of tooth on UPPER 25		6.4.5.2	q40part_dent_U25	yes
Partial denture(s) presence of tooth on UPPER 26		6.4.5.2	q40part_dent_U26	yes
Partial denture(s) presence of tooth on UPPER 27		6.4.5.2	q40part_dent_U27	yes
Partial denture(s) presence of tooth on UPPER 28		6.4.5.2	q40part_dent_U28	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Partial denture(s) presence of tooth on LOWER 48		6.4.5.2	q40part_dent_L48	yes
Partial denture(s) presence of tooth on LOWER 47		6.4.5.2	q40part_dent_L47	yes
Partial denture(s) presence of tooth on LOWER 46		6.4.5.2	q40part_dent_L46	yes
Partial denture(s) presence of tooth on LOWER 45		6.4.5.2	q40part_dent_L45	yes
Partial denture(s) presence of tooth on LOWER 44		6.4.5.2	q40part_dent_L44	yes
Partial denture(s) presence of tooth on LOWER 43		6.4.5.2	q40part_dent_L43	yes
Partial denture(s) presence of tooth on LOWER 42		6.4.5.2	q40part_dent_L42	yes
Partial denture(s) presence of tooth on LOWER 41		6.4.5.2	q40part_dent_L41	yes
Partial denture(s) presence of tooth on LOWER 31		6.4.5.2	q40part_dent_L31	yes
Partial denture(s) presence of tooth on LOWER 32		6.4.5.2	q40part_dent_L32	yes
Partial denture(s) presence of tooth on LOWER 33		6.4.5.2	q40part_dent_L33	yes
Partial denture(s) presence of tooth on LOWER 34		6.4.5.2	q40part_dent_L34	yes
Partial denture(s) presence of tooth on LOWER 35		6.4.5.2	q40part_dent_L35	yes
Partial denture(s) presence of tooth on LOWER 36		6.4.5.2	q40part_dent_L36	yes
Partial denture(s) presence of tooth on LOWER 37		6.4.5.2	q40part_dent_L37	yes
Partial denture(s) presence of tooth on LOWER 38		6.4.5.2	q40part_dent_L38	yes
Functional pairs - RIGHT Posterior 8D	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_R8D	yes
Functional pairs - RIGHT Posterior 8M	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_R8M	yes
Functional pairs - RIGHT Posterior 7D	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_R7D	yes
Functional pairs - RIGHT Posterior 7M	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_R7M	yes
Functional pairs - RIGHT Posterior 6D	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_R6D	yes
Functional pairs - RIGHT Posterior 6M	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_R6M	yes
Functional pairs - RIGHT Posterior 5	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_R5	yes
Functional pairs - RIGHT Posterior 4	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_R4	yes
Functional pairs - LEFT Posterior 4	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_L4	yes
Functional pairs - LEFT Posterior 5	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_L5	yes
Functional pairs - LEFT Posterior 6M	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_L6M	yes
Functional pairs - LEFT Posterior 6D	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_L6D	yes
Functional pairs - LEFT Posterior 7M	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_L7M	yes
Functional pairs - LEFT Posterior 7D	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_L7D	yes
Functional pairs - LEFT Posterior 8M	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_L8M	yes
Functional pairs - LEFT Posterior 8D	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Post_L8D	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Anterior RIGHT 13	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Ant_R13	yes
Anterior RIGHT 12	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Ant_R12	yes
Anterior RIGHT 11	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Ant_R11	yes
Anterior LEFT 21	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Ant_L21	yes
Anterior LEFT 22	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Ant_L22	yes
Anterior LEFT 23	1=Contact present, 9=Absent	6.4.5.3	q40FPairs_Ant_L23	yes
Number of natural posterior teeth (upper or lower) with no opposing natural tooth		6.4.5.3	q40Num_no_opp_nat_tooth	yes
Number of natural posterior teeth (upper or lower) opposed only by denture		6.4.5.3	q40Num_opp_by_dent	yes
Total number of NATURAL TEETH - TOTAL UPPER		6.4.5.1	q40TotalTeeth_U	yes
Presence of natural tooth on UPPER 18	1=present 2=implant 3=root stump 9=Missing tooth	6.4.5.1	q40PNatTeeth_U18	yes
Presence of natural tooth on UPPER 17		6.4.5.1	q40PNatTeeth_U17	yes
Presence of natural tooth on UPPER 16		6.4.5.1	q40PNatTeeth_U16	yes
Presence of natural tooth on UPPER 15		6.4.5.1	q40PNatTeeth_U15	yes
Presence of natural tooth on UPPER 14		6.4.5.1	q40PNatTeeth_U14	yes
Presence of natural tooth on UPPER 13		6.4.5.1	q40PNatTeeth_U13	yes
Presence of natural tooth on UPPER 12		6.4.5.1	q40PNatTeeth_U12	yes
Presence of natural tooth on UPPER 11		6.4.5.1	q40PNatTeeth_U11	yes
Presence of natural tooth on UPPER 21		6.4.5.1	q40PNatTeeth_U21	yes
Presence of natural tooth on UPPER 22		6.4.5.1	q40PNatTeeth_U22	yes
Presence of natural tooth on UPPER 23		6.4.5.1	q40PNatTeeth_U23	yes
Presence of natural tooth on UPPER 24		6.4.5.1	q40PNatTeeth_U24	yes
Presence of natural tooth on UPPER 25		6.4.5.1	q40PNatTeeth_U25	yes
Presence of natural tooth on UPPER 26		6.4.5.1	q40PNatTeeth_U26	yes
Presence of natural tooth on UPPER 27		6.4.5.1	q40PNatTeeth_U27	yes
Presence of natural tooth on UPPER 28		6.4.5.1	q40PNatTeeth_U28	yes
Total number of NATURAL TEETH - TOTAL LOWER		6.4.5.1	q40TotalTeeth_L	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Presence of natural tooth on LOWER 48	1=present 2=implant 3=rootstump 9=Missing tooth	6.4.5.1	q40PNatTeeth_L48	yes
Presence of natural tooth on LOWER 47		6.4.5.1	q40PNatTeeth_L47	yes
Presence of natural tooth on LOWER 46		6.4.5.1	q40PNatTeeth_L46	yes
Presence of natural tooth on LOWER 45		6.4.5.1	q40PNatTeeth_L45	yes
Presence of natural tooth on LOWER 44		6.4.5.1	q40PNatTeeth_L44	yes
Presence of natural tooth on LOWER 43		6.4.5.1	q40PNatTeeth_L43	yes
Presence of natural tooth on LOWER 42		6.4.5.1	q40PNatTeeth_L42	yes
Presence of natural tooth on LOWER 41		6.4.5.1	q40PNatTeeth_L41	yes
Presence of natural tooth on LOWER 31		6.4.5.1	q40PNatTeeth_L31	yes
Presence of natural tooth on LOWER 32		6.4.5.1	q40PNatTeeth_L32	yes
Presence of natural tooth on LOWER 33		6.4.5.1	q40PNatTeeth_L33	yes
Presence of natural tooth on LOWER 34		6.4.5.1	q40PNatTeeth_L34	yes
Presence of natural tooth on LOWER 35		6.4.5.1	q40PNatTeeth_L35	yes
Presence of natural tooth on LOWER 36		6.4.5.1	q40PNatTeeth_L36	yes
Presence of natural tooth on LOWER 37		6.4.5.1	q40PNatTeeth_L37	yes
Presence of natural tooth on LOWER 38		6.4.5.1	q40PNatTeeth_L38	yes
Loss of Attachment (LA) Distal 17	LA/PD score 0 = 0 to 0.5 mm 1 = 0.6 to 3.5 mm 2 = 3.6 to 5.5 mm 3 = 5.6 to 8.5 mm 4 = 8.6 to 11.5 mm 8=Unscorable 9 = Missing tooth	6.4.5.6	q40Perio_LA17D	yes
Loss of Attachment (LA) Mesial 17		6.4.5.6	q40Perio_LA17M	yes
Loss of Attachment (LA) Distal 16		6.4.5.6	q40Perio_LA16D	yes
Loss of Attachment (LA) Mesial 16		6.4.5.6	q40Perio_LA16M	yes
Loss of Attachment (LA) Distal 15		6.4.5.6	q40Perio_LA15D	yes
Loss of Attachment (LA) Mesial 15		6.4.5.6	q40Perio_LA15M	yes
Loss of Attachment (LA) Distal 14		6.4.5.6	q40Perio_LA14D	yes
Loss of Attachment (LA) Mesial 14		6.4.5.6	q40Perio_LA14M	yes
Loss of Attachment (LA) Distal 13		6.4.5.6	q40Perio_LA13D	yes
Loss of Attachment (LA) Mesial 13		6.4.5.6	q40Perio_LA13M	yes
Loss of Attachment (LA) Distal 12		6.4.5.6	q40Perio_LA12D	yes
Loss of Attachment (LA) Mesial 12		6.4.5.6	q40Perio_LA12M	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Loss of Attachment (LA) Distal 11	LA/PD score 0 = 0 to 0.5 mm 1 = 0.6 to 3.5 mm 2 = 3.6 to 5.5 mm 3 = 5.6 to 8.5 mm 4 = 8.6 to 11.5 mm 8=Unscorable 9 = Missing tooth	6.4.5.6	q40Perio_LA11D	yes
Loss of Attachment (LA) Mesial 11		6.4.5.6	q40Perio_LA11M	yes
Loss of Attachment (LA) Mesial 21		6.4.5.6	q40Perio_LA21M	yes
Loss of Attachment (LA) Distal 21		6.4.5.6	q40Perio_LA21D	yes
Loss of Attachment (LA) Mesial 22		6.4.5.6	q40Perio_LA22M	yes
Loss of Attachment (LA) Distal 22		6.4.5.6	q40Perio_LA22D	yes
Loss of Attachment (LA) Mesial 23		6.4.5.6	q40Perio_LA23M	yes
Loss of Attachment (LA) Distal 23		6.4.5.6	q40Perio_LA23D	yes
Loss of Attachment (LA) Mesial 24		6.4.5.6	q40Perio_LA24M	yes
Loss of Attachment (LA) Distal 24		6.4.5.6	q40Perio_LA24D	yes
Loss of Attachment (LA) Mesial 25		6.4.5.6	q40Perio_LA25M	yes
Loss of Attachment (LA) Distal 25		6.4.5.6	q40Perio_LA25D	yes
Loss of Attachment (LA) Mesial 26		6.4.5.6	q40Perio_LA26M	yes
Loss of Attachment (LA) Distal 26		6.4.5.6	q40Perio_LA26D	yes
Loss of Attachment (LA) Mesial 27		6.4.5.6	q40Perio_LA27M	yes
Loss of Attachment (LA) Distal 27		6.4.5.6	q40Perio_LA27D	yes
Periodontal Pocket Depth (PD) Mesial 17	LA/PD score 0 = 0 to 0.5 mm 1 = 0.6 to 3.5 mm 2 = 3.6 to 5.5 mm 3 = 5.6 to 8.5 mm 4 = 8.6 to 11.5 mm 8=Unscorable 9 = Missing tooth	6.4.5.6	q40Perio_PD17M	yes
Periodontal Pocket Depth (PD) Mesial 16		6.4.5.6	q40Perio_PD16M	yes
Periodontal Pocket Depth (PD) Mesial 15		6.4.5.6	q40Perio_PD15M	yes
Periodontal Pocket Depth (PD) Mesial 14		6.4.5.6	q40Perio_PD14M	yes
Periodontal Pocket Depth (PD) Mesial 13		6.4.5.6	q40Perio_PD13M	yes
Periodontal Pocket Depth (PD) Mesial 12		6.4.5.6	q40Perio_PD12M	yes
Periodontal Pocket Depth (PD) Mesial 11		6.4.5.6	q40Perio_PD11M	yes
Periodontal Pocket Depth (PD) Mesial 21		6.4.5.6	q40Perio_PD21M	yes
Periodontal Pocket Depth (PD) Mesial 22		6.4.5.6	q40Perio_PD22M	yes
Periodontal Pocket Depth (PD) Mesial 23		6.4.5.6	q40Perio_PD23M	yes
Periodontal Pocket Depth (PD) Mesial 24		6.4.5.6	q40Perio_PD24M	yes
Periodontal Pocket Depth (PD) Mesial 25		6.4.5.6	q40Perio_PD25M	yes
Periodontal Pocket Depth (PD) Mesial 26		6.4.5.6	q40Perio_PD26M	yes
Periodontal Pocket Depth (PD) Mesial 27		6.4.5.6	q40Perio_PD27M	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Gingival Bleeding (GB) Distal 17	GB score 0=No 1=yes 8=unscorable 9=Missing tooth	6.4.5.6	q40Perio_GB17D	yes
Gingival Bleeding (GB) Mesial 17		6.4.5.6	q40Perio_GB17M	yes
Gingival Bleeding (GB) Distal 16		6.4.5.6	q40Perio_GB16D	yes
Gingival Bleeding (GB) Mesial 16		6.4.5.6	q40Perio_GB16M	yes
Gingival Bleeding (GB) Distal 15		6.4.5.6	q40Perio_GB15D	yes
Gingival Bleeding (GB) Mesial 15		6.4.5.6	q40Perio_GB15M	yes
Gingival Bleeding (GB) Distal 14		6.4.5.6	q40Perio_GB14D	yes
Gingival Bleeding (GB) Mesial 14		6.4.5.6	q40Perio_GB14M	yes
Gingival Bleeding (GB) Distal 13		6.4.5.6	q40Perio_GB13D	yes
Gingival Bleeding (GB) Mesial 13		6.4.5.6	q40Perio_GB13M	yes
Gingival Bleeding (GB) Distal 12		6.4.5.6	q40Perio_GB12D	yes
Gingival Bleeding (GB) Mesial 12		6.4.5.6	q40Perio_GB12M	yes
Gingival Bleeding (GB) Distal 11		6.4.5.6	q40Perio_GB11D	yes
Gingival Bleeding (GB) Mesial 11		6.4.5.6	q40Perio_GB11M	yes
Gingival Bleeding (GB) Mesial 21		6.4.5.6	q40Perio_GB21M	yes
Gingival Bleeding (GB) Distal 21		6.4.5.6	q40Perio_GB21D	yes
Gingival Bleeding (GB) Mesial 22		6.4.5.6	q40Perio_GB22M	yes
Gingival Bleeding (GB) Distal 22		6.4.5.6	q40Perio_GB22D	yes
Gingival Bleeding (GB) Mesial 23		6.4.5.6	q40Perio_GB23M	yes
Gingival Bleeding (GB) Distal 23		6.4.5.6	q40Perio_GB23D	yes
Gingival Bleeding (GB) Mesial 24		6.4.5.6	q40Perio_GB24M	yes
Gingival Bleeding (GB) Distal 24		6.4.5.6	q40Perio_GB24D	yes
Gingival Bleeding (GB) Mesial 25		6.4.5.6	q40Perio_GB25M	yes
Gingival Bleeding (GB) Distal 25		6.4.5.6	q40Perio_GB25D	yes
Gingival Bleeding (GB) Mesial 26		6.4.5.6	q40Perio_GB26M	yes
Gingival Bleeding (GB) Distal 26		6.4.5.6	q40Perio_GB26D	yes
Gingival Bleeding (GB) Mesial 27		6.4.5.6	q40Perio_GB27M	yes
Gingival Bleeding (GB) Distal 27		6.4.5.6	q40Perio_GB27D	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Loss of Attachment (LA) Distal 47	LA/PD score 0 = 0 to 0.5 mm 1 = 0.6 to 3.5 mm 2 = 3.6 to 5.5 mm 3 = 5.6 to 8.5 mm 4 = 8.6 to 11.5 mm 8=Unscorable 9 = Missing tooth	6.4.5.6	q40Perio_LA47D	yes
Loss of Attachment (LA) Mesial 47		6.4.5.6	q40Perio_LA47M	yes
Loss of Attachment (LA) Distal 46		6.4.5.6	q40Perio_LA46D	yes
Loss of Attachment (LA) Mesial 46		6.4.5.6	q40Perio_LA46M	yes
Loss of Attachment (LA) Distal 45		6.4.5.6	q40Perio_LA45D	yes
Loss of Attachment (LA) Mesial 45		6.4.5.6	q40Perio_LA45M	yes
Loss of Attachment (LA) Distal 44		6.4.5.6	q40Perio_LA44D	yes
Loss of Attachment (LA) Mesial 44		6.4.5.6	q40Perio_LA44M	yes
Loss of Attachment (LA) Distal 43		6.4.5.6	q40Perio_LA43D	yes
Loss of Attachment (LA) Mesial 43		6.4.5.6	q40Perio_LA43M	yes
Loss of Attachment (LA) Distal 42		6.4.5.6	q40Perio_LA42D	yes
Loss of Attachment (LA) Mesial 42		6.4.5.6	q40Perio_LA42M	yes
Loss of Attachment (LA) Distal 41		6.4.5.6	q40Perio_LA41D	yes
Loss of Attachment (LA) Mesial 41		6.4.5.6	q40Perio_LA41M	yes
Loss of Attachment (LA) Mesial 31		6.4.5.6	q40Perio_LA31M	yes
Loss of Attachment (LA) Distal 31		6.4.5.6	q40Perio_LA31D	yes
Loss of Attachment (LA) Mesial 32		6.4.5.6	q40Perio_LA32M	yes
Loss of Attachment (LA) Distal 32		6.4.5.6	q40Perio_LA32D	yes
Loss of Attachment (LA) Mesial 33		6.4.5.6	q40Perio_LA33M	yes
Loss of Attachment (LA) Distal 33		6.4.5.6	q40Perio_LA33D	yes
Loss of Attachment (LA) Mesial 34		6.4.5.6	q40Perio_LA34M	yes
Loss of Attachment (LA) Distal 34		6.4.5.6	q40Perio_LA34D	yes
Loss of Attachment (LA) Mesial 35		6.4.5.6	q40Perio_LA35M	yes
Loss of Attachment (LA) Distal 35		6.4.5.6	q40Perio_LA35D	yes
Loss of Attachment (LA) Mesial 36		6.4.5.6	q40Perio_LA36M	yes
Loss of Attachment (LA) Distal 36		6.4.5.6	q40Perio_LA36D	yes
Loss of Attachment (LA) Mesial 37		6.4.5.6	q40Perio_LA37M	yes
Loss of Attachment (LA) Distal 37		6.4.5.6	q40Perio_LA37D	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Periodontal Pocket (PD) Mesial 47	LA/PD score 0 = 0 to 0.5 mm 1 = 0.6 to 3.5 mm 2 = 3.6 to 5.5 mm 3 = 5.6 to 8.5 mm 4 = 8.6 to 11.5 mm 8=Unscorable 9 = Missing tooth	6.4.5.6	q40Perio_PD47M	yes
Periodontal Pocket (PD) Mesial 46		6.4.5.6	q40Perio_PD46M	yes
Periodontal Pocket (PD) Mesial 45		6.4.5.6	q40Perio_PD45M	yes
Periodontal Pocket (PD) Mesial 44		6.4.5.6	q40Perio_PD44M	yes
Periodontal Pocket (PD) Mesial 43		6.4.5.6	q40Perio_PD43M	yes
Periodontal Pocket (PD) Mesial 42		6.4.5.6	q40Perio_PD42M	yes
Periodontal Pocket (PD) Mesial 41		6.4.5.6	q40Perio_PD41M	yes
Periodontal Pocket (PD) Mesial 31		6.4.5.6	q40Perio_PD31M	yes
Periodontal Pocket (PD) Mesial 32		6.4.5.6	q40Perio_PD32M	yes
Periodontal Pocket (PD) Mesial 33		6.4.5.6	q40Perio_PD33M	yes
Periodontal Pocket (PD) Mesial 34		6.4.5.6	q40Perio_PD34M	yes
Periodontal Pocket (PD) Mesial 35		6.4.5.6	q40Perio_PD35M	yes
Periodontal Pocket (PD) Mesial 36		6.4.5.6	q40Perio_PD36M	yes
Periodontal Pocket (PD) Mesial 37		6.4.5.6	q40Perio_PD37M	yes
Gingival Bleeding (GB) Distal 47	GB score 0=No 1=yes 8=unscorable 9=Missing tooth	6.4.5.6	q40Perio_GB47D	yes
Gingival Bleeding (GB) Mesial 47		6.4.5.6	q40Perio_GB47M	yes
Gingival Bleeding (GB) Distal 46		6.4.5.6	q40Perio_GB46D	yes
Gingival Bleeding (GB) Mesial 46		6.4.5.6	q40Perio_GB46M	yes
Gingival Bleeding (GB) Distal 45		6.4.5.6	q40Perio_GB45D	yes
Gingival Bleeding (GB) Mesial 45		6.4.5.6	q40Perio_GB45M	yes
Gingival Bleeding (GB) Distal 44		6.4.5.6	q40Perio_GB44D	yes
Gingival Bleeding (GB) Mesial 44		6.4.5.6	q40Perio_GB44M	yes
Gingival Bleeding (GB) Distal 43		6.4.5.6	q40Perio_GB43D	yes
Gingival Bleeding (GB) Mesial 43		6.4.5.6	q40Perio_GB43M	yes
Gingival Bleeding (GB) Distal 42		6.4.5.6	q40Perio_GB42D	yes
Gingival Bleeding (GB) Mesial 42		6.4.5.6	q40Perio_GB42M	yes
Gingival Bleeding (GB) Distal 41		6.4.5.6	q40Perio_GB41D	yes
Gingival Bleeding (GB) Mesial 41		6.4.5.6	q40Perio_GB41M	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Gingival Bleeding (GB) Mesial 31	GB score 0=No 1=yes 8=unscorable 9=Missing tooth	6.4.5.6	q40Perio_GB31M	yes
Gingival Bleeding (GB) Distal 31		6.4.5.6	q40Perio_GB31D	yes
Gingival Bleeding (GB) Mesial 32		6.4.5.6	q40Perio_GB32M	yes
Gingival Bleeding (GB) Distal 32		6.4.5.6	q40Perio_GB32D	yes
Gingival Bleeding (GB) Mesial 33		6.4.5.6	q40Perio_GB33M	yes
Gingival Bleeding (GB) Distal 33		6.4.5.6	q40Perio_GB33D	yes
Gingival Bleeding (GB) Mesial 34		6.4.5.6	q40Perio_GB34M	yes
Gingival Bleeding (GB) Distal 34		6.4.5.6	q40Perio_GB34D	yes
Gingival Bleeding (GB) Mesial 35		6.4.5.6	q40Perio_GB35M	yes
Gingival Bleeding (GB) Distal 35		6.4.5.6	q40Perio_GB35D	yes
Gingival Bleeding (GB) Mesial 36		6.4.5.6	q40Perio_GB36M	yes
Gingival Bleeding (GB) Distal 36		6.4.5.6	q40Perio_GB36D	yes
Gingival Bleeding (GB) Mesial 37		6.4.5.6	q40Perio_GB37M	yes
Gingival Bleeding (GB) Distal 37		6.4.5.6	q40Perio_GB37D	yes
Clinical oral dryness score: : 1. Mirror sticks to buccal mucosa	1=Yes, 2=No	6.4.5.5	q40CODscore_q1	yes
Clinical oral dryness score: 2. Mirror sticks to tongue	1=Yes, 2=No	6.4.5.5	q40CODscore_q2	yes
Clinical oral dryness score: 3. Frothy saliva	1=Yes, 2=No	6.4.5.5	q40CODscore_q3	yes
Clinical oral dryness score: 4. Saliva pooling in floor of mouth	1=Yes, 2=No	6.4.5.5	q40CODscore_q4	yes
Clinical oral dryness score: 5. Tongue shows loss of papillae	1=Yes, 2=No	6.4.5.5	q40CODscore_q5	yes
Clinical oral dryness score: 6. Altered/smooth gingival architecture	1=Yes, 2=No	6.4.5.5	q40CODscore_q6	yes
Clinical oral dryness score: 7. Glassy appearance of other mucosa, especially palate	1=Yes, 2=No	6.4.5.5	q40CODscore_q7	yes
Clinical oral dryness score: 8. Tongue lobulated/ fissured	1=Yes, 2=No	6.4.5.5	q40CODscore_q8	yes
Clinical oral dryness score: 9. Active or recently restored (last 6 months) cervical caries >2 teeth	1=Yes, 2=No	6.4.5.5	q40CODscore_q9	yes
Clinical oral dryness score: 10. Debris on palate (excluding under dentures)	1=Yes, 2=No	6.4.5.5	q40CODscore_q10	yes
Soft tissue lesion(s) 1. None	1=Yes, 2=No	6.4.5.4	q40STL_q1	yes
Soft tissue lesion(s) 2. Angular cheilitis	1=Yes, 2=No	6.4.5.4	q40STL_q2	yes
Soft tissue lesion(s) 3. Denture stomatitis	1=Yes, 2=No	6.4.5.4	q40STL_q3	yes
Soft tissue lesion(s) 4. Denture hyperplasia	1=Yes, 2=No	6.4.5.4	q40STL_q4	yes
Soft tissue lesion(s) 5. Ulcer associated with denture trauma	1=Yes, 2=No	6.4.5.4	q40STL_q5	yes
Soft tissue lesion(s) 6. Other	1=Yes, 2=No	6.4.5.4	q40STL_q6	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Workstation 2 Spirometry				
Station 2 Spirometry Observer initials	RE	6.5	q40ST2SP_obs	yes
Contraindications: Collapsed lung/pneumothorax in last 6 weeks?	1=yes, .=no	6.5	q40CI_lung	yes
Contraindications: Heart attack or Stroke in last 6 weeks?	1=yes	6.5	q40CI_HA_ST	yes
Contraindications: Ear, Eye, chest or abdominal surgery in last 6 weeks	1=yes	6.5	q40CI_surgery	yes
SPIROMETRY test Instrument	1,2,3	6.5	q40Spir_instr	yes
SPIROMETRY test time: hour	hour	6.5	q40Spir_time_hour	yes
SPIROMETRY test time: minutes	Minutes	6.5	q40Spir_time_min	yes
Chest Infection in last 6 weeks	1=yes	6.5	q40Spir_chest_inf	yes
Inhaler used in last 24 hours	1=yes	6.5	q40Spir_inhaler_use	yes
BTV % from instruments 1 and 2	%	6.5	q40Spir_BTV_instrument1and2	yes
BTV % from instruments 3 - different format to 1 and 2	A, B, C, D, X=blank	6.5	q40Spir_BTV_instrument3	yes
Problem with Spirometry task	1=P, 2=T	6.5	q40Spir_Prob	yes
Spirometry ID		6.5	q40Spir_ID	yes
Number of blows	number	6.5	q40NoBlows	yes
SessionQA_instrument1and2 (BTV % from instruments 1 and 2)	%	6.5	q40SessionQA_instrument1and2	yes
SessionQA_instrument3 $	Grade A: Highest quality Grade B: Good quality Grade C: Fair quality Grade D: Poor quality X=different instrument used	6.5	q40SessionQA_instrument3	yes
FVC	L	6.5	q40FVC	yes
FEV5	L	6.5	q40FEV5	yes
FEV1	L	6.5	q40FEV1	yes
PEF	L/min	6.5	q40PEF	yes
FEF2575	L/s	6.5	q40FEF2575	yes
FEF7585	L/s	6.5	q40FEF7585	yes
FEF25	L/s	6.5	q40FEF25	yes
FEF50	L/s	6.5	q40FEF50	yes
FEF75	L/s	6.5	q40FEF75	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
Workstation 3				
Station 3 Observer initials	EA,RJ	7.3.1	q40ST3_obs	yes
Height measurement (uncorrected) **do not use – contains errors**	**DO NOT USE**	7.3.1	q40Height_UNcorrected	yes
Height measurement(cm) corrected - **This is the correct height variable**	cm	7.3.1.1	q40height_corr	yes
Problem with height measurement	1=P, 2=T	7.3.1	q40Heght_prob	yes
Weight (Combined form BOTH the Tanita machine AND the Digital Scales)	kg	7.32.3	q40weight	yes
Weight from Tanita machine ONLY (kg)	kg	7.3.2	q40Weight_tan	yes
Problem with Tanita machine measurements	1=P, 2=T	7.3.2	q40Weight_tan_prob	yes
Weight from digital scales ONLY for those wearing a pacemaker (unable to use Tanita) (kg)	kg	7.3.2	q40Weight_sc	yes
Problem with the digital scales	1=P, 2=T	7.3.2	q40weight_sc_prob	yes
Time of blood test - hour	hour (24 hour clock)	7.3	q40BT_hour	yes
Time of blood test - minutes	minutes	7.3	q40BT_min	yes
Fasting instructions followed?	1=yes, 2=No, 3=No(diabetic)	7.3	q40BT_Fast_ins	yes
Time last eaten? - hour	hour	7.3	q40BT_time_last_eat_hour	yes
Time last eaten? - minutes	minutes	7.3	q40BT_time_last_eat_min	yes
Day last eaten?	1=Today, 2=Yesterday	7.3	q40BT_day_last_eat	yes
Blood test ID		7.3	q40BT_ID	yes
Blood Test Success?	2=Full sample, 1=Part sample 0=none taken	7.3	q40BT_Success	yes
Problem with blood taking	1=refusal, 2=technical	7.3	q40BT_Prob	yes
IF blood sample is incomplete (i.e. “PART” sample, mark complete tubes with 1) Tube A	1=part sample (NOT a full sample)	7.3	q40compl_tube_A	yes
IF blood sample is incomplete (i.e. “PART” sample, mark complete tubes with 1) Tube B	1=part sample (NOT a full sample)	7.3	q40compl_tube_B	yes
IF blood sample is incomplete (i.e. “PART” sample, mark complete tubes with 1) Tube C	1=part sample (NOT a full sample)	7.3	q40compl_tube_C	yes
IF blood sample is incomplete (i.e. “PART” sample, mark complete tubes with 1) Tube DE	1=part sample (NOT a full sample)	7.3	q40compl_tube_DE	yes
IF blood sample is incomplete (i.e. “PART” sample, mark complete tubes with 1) Tube FJ	1=part sample (NOT a full sample)	7.3	q40compl_tube_FJ	yes
IF blood sample is incomplete (i.e. “PART” sample, mark complete tubes with 1) Tube K	1=part sample (NOT a full sample)	7.3	q40compl_tube_K	yes
IF blood sample is incomplete (i.e. “PART” sample, mark complete tubes with 1) Tube LN	1=part sample (NOT a full sample)	7.3	q40compl_tube_LN	yes
IF blood sample is incomplete (i.e. “PART” sample, mark complete tubes with 1) Tube PS	1=part sample (NOT a full sample)	7.3	q40compl_tube_PS	yes
IF blood sample is incomplete (i.e. “PART” sample, mark complete tubes with 1) Tube T	1=part sample (NOT a full sample)	7.3	q40compl_tube_T	yes

Description/cont.	Units/Category labels	Protocol section	BRHS Variable name	Data access
BIOIMPEDANCE DATA: Body type	1=standard, 2=athletic	7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Gender	1=male, 2=female	7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Age (on last birthday entered in the Tanita machine)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Height (entered in the Tanita machine)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Weight - do not use this variable. USE q40weight (see above)	kg	7.3.2.2	Not included in the dataset	n/a
BIOIMPEDANCE DATA: BMI	**NOTE** Due to issues with data inputs into the Tanita machine, the integrity of the body composition outputs has been compromised. As a result, the data is not being shared/made available.	7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: BMI_kj		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: BMI_kcal		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Fat %		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Fat mass		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: FFM		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: TBW		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Visceral fat rating		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Min of Fat % range		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Max of Fat % range		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Min of Fat mass range		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Max of Fat mass range		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: IMPEDANCE Whole Body		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: IMPEDANCE Right leg		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: IMPEDANCE Left leg		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: IMPEDANCE Right arm		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: IMPEDANCE Left arm		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Right leg Fat (%)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Right leg Fat mass (kg)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Right leg FFM (kg)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Right leg Predicted Muscle Mass (kg)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Left leg Fat (%)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Left leg Fat mass (kg)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Left leg FFM (kg)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Left leg Predicted Muscle Mass (kg)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Right arm Fat (%)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Right arm Fat mass (kg)		7.2.2 Note	Not included in the dataset	n/a
BIOIMPEDANCE DATA: Segmental Analysis Right arm FFM (kg)		7.2.2 Note	Not included in the dataset	n/a

BIOIMPEDANCE DATA: Segmental Analysis Right arm Predicted Muscle Mass (kg)	**NOTE** Due to issues with data inputs into the Tanita machine, the integrity of the body composition outputs has been compromised. As a result, the data is not being shared/made available.	7.2.2 Note	Not included in the dataset	**n/a**
BIOIMPEDANCE DATA: Segmental Analysis Left arm Fat (%)		7.2.2 Note	Not included in the dataset	**n/a**
BIOIMPEDANCE DATA: Segmental Analysis Left arm Fat mass (kg)		7.2.2 Note	Not included in the dataset	**n/a**
BIOIMPEDANCE DATA: Segmental Analysis Left arm FFM (kg)		7.2.2 Note	Not included in the dataset	**n/a**
BIOIMPEDANCE DATA: Segmental Analysis Left arm Predicted Muscle Mass (kg)		7.2.2 Note	Not included in the dataset	**n/a**
BIOIMPEDANCE DATA: Segmental Analysis Trunk Fat (%)		7.2.2 Note	Not included in the dataset	**n/a**
BIOIMPEDANCE DATA: Segmental Analysis Trunk Fat mass (kg)		7.2.2 Note	Not included in the dataset	**n/a**
BIOIMPEDANCE DATA: Segmental Analysis Trunk FFM (kg)		7.2.2 Note	Not included in the dataset	**n/a**
BIOIMPEDANCE DATA: Segmental Analysis Trunk Predicted Muscle Mass (kg)		7.2.2 Note	Not included in the dataset	**n/a**

ii) 40 year follow-up Physical examination protocol (extract)
(Measurement procedures - Sections 5.0 – 7.3.3)

5.0 STATION 1 (RESEARCH NURSE) PROCEDURES

5.1 On arrival in the morning

Research Nurse 1 will be responsible for switching on all equipment on the station and for calibrating equipment for the station (stadiometer, spirometer).

5.2 CALIBRATION AND CHECKING OF INSTRUMENTS (Research Nurse 1)

5.2.1 MORNING SESSION

The following calibration steps should be undertaken: -

- Skinfold calliper
- Check that gauge is zeroed

5.3 Measurements

These will be taken in order as follows. **Shoes are kept <u>on</u> for these measures: -**

5.3.1 Chair Stand Test (5 stands)

Explain that we will want the participant to stand up from a chair 5 times to see how long it takes. Seek their agreement – if they do not wish to undertake test indicate reason (refusal =1, disability= 2)

Set Up

Use a standard chair without arms and with a seat height of approximately 17 inches for all assessments, regardless of the height of the subject. If possible, place the back of the chair against a wall to prevent movement during the test.

Please ensure that the subject is wearing sensible flat shoes.

Procedure

Instruct and demonstrate the following protocol before asking the subject to perform the test:
Sit as far back as possible in the chair seat. Keep feet firmly planted on the floor, approximately hip width apart and the back of lower legs away from the chair.

Keep knees bent at a 90-degree angle and **<u>arms crossed over the chest</u>.**
(An individual of average or taller height will be able to sit with their upper back against the back of the chair. Individuals of shorter than average height will not be able to touch the chair back while maintaining proper position and are not required to touch the chair back during testing).

Demonstrate the procedure once, returning completely to the correct starting position.

As a trial go, ask the subject to stand from a sitting position with their arms folded, to a straight-legged fully standing position.

The subject should stand to a fully erect position i.e. their knees should not be bent and their back should be upright. This can be assessed on an individual basis i.e. they should stand as upright as they would normally.

After successful completion of the practice go, explain to the subject that on your word "go" you would like them to stand up and sit back down as practiced, five times. Explain that you would like them to do this as quickly as possible and that you will be timing them.

- At the command "Ready, Set, Go" the tester begins timing by starting the stopwatch.
- Count each chair stand out loud when the subject is in the standing position.
- Provide continuous verbal encouragement during the test.
- Stop the stopwatch when the subject is seated back in the chair on the final go, with arms remaining folded and back supported by the chair.

If subjects are unable to stand up one time without assistance than they can use their hands to assist them in rising and returning to the seated position while following all other procedures as described above. Make sure to note that hands were used when recording the assessment data.

If the test is not completed within 30 seconds, record how many completed lifts have been made at that point.

5.3.2 Three metre walking test

General preparation
A 3-metre walkway or 'corridor' is constructed along a wall in a smooth-floored area. Narrow 15-centimetre vertical strips are fixed on the wall at floor level and 3 metres apart within the corridor. We prefer this to sticking a line on the floor which, in our experience, can distract patients. Chairs should be positioned at each end, but at least 0.5 m from the markers to allow for acceleration and deceleration effects. These chairs are of a height to suit the person and facilitate easy standing up.

Explain that we will want the participant to walk a short distance along a corridor at their normal walking pace. Seek their agreement. If they do not wish to undertake test indicate reason (refusal=1, disability=2).

If the subject cannot walk without your assistance they cannot perform the test. Please indicate this in the boxes provided on the data entry sheet.

Subjects sit on a chair wearing their usual comfortable footwear or something suitable which has been provided. Thick-soled trainers are avoided so far as possible.

Avoid doing test while other people are passing close by.

Initial Instructions
I will ask you to stand up and will then say "Go". Then you should walk down to the chair facing you [indicate] at a comfortable pace without rushing. Do not stop until you have reached the other chair. Are you clear about what you are going to do?'

Starting Position

If necessary, subjects are helped to stand up. They may be reminded to walk at a comfortable pace, without rushing and without stopping, until they reach the opposite chair.

Instructions

Once the person is upright and steady the command ‘Go' is given calmly, not in a way to imply the need for speed.

Warnings and Encouragement
During the walk no oral encouragement should be given although occasionally the command ‘Keep going' is given if subjects seem about to stop or be distracted. Afterwards their efforts are rewarded with ‘Well done'.

Feedback about the actual time taken is not given.

Timing
Stop-watches, which time to at least 0.01 seconds, should be checked for accuracy regularly. Ordinary wrist watches with second hands are not suitable. The tester, carrying the stopwatch, walks quietly at the side of subjects as they pass the first marker, then continues slightly behind them until close to the final marker when he moves forward opposite it. The tester avoids conveying any sense of pressure on the patient to hurry. Timing begins when the tip of the first foot crosses the first vertical strip and stops when the heel of the last foot crosses the second vertical strip.

If the test is not finished after 30 seconds, mark the data sheet accordingly.

5.3.3 Calf circumference (maximal calf circumference)

Restrictions No restriction, unless participant is unable to stand.

Site Flat surface.

Preparation participant should be sitting with the left leg hanging loosely or standing with their weight evenly distributed on both feet. Ask participant to roll up their trouser leg to uncover the calf.

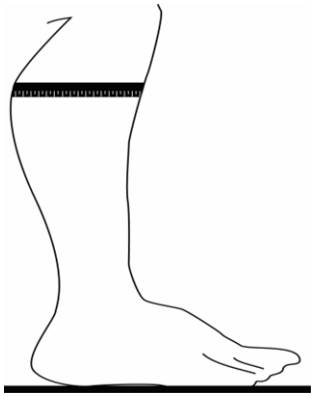
Equipment Circumference tape measure.

Wrap the tape around the calf at the widest part and record the measurement. Slide the tape measure up and down the calf to find the widest point. Take the measure there. Record to the last completed millimetre.

Take additional measurements above and below the point to ensure that the first measurement was the largest.

An accurate measurement can only be obtained if the tape is at a right angle to the length of the calf (see figure below).

Figure: Measuring tape position for maximal calf circumference



5.3.4 Waist circumference

Restrictions No restriction, unless participant is unable to stand to have his weight measured.
Site Flat surface
Preparation Participant wearing light clothing with shirt removed or tucked away – standing.
Equipment Circumference tape measure

Waist and hip measurements should be made with the subject standing with feet one foot apart on a marked template.

The waist should be identified as the mid-point between the iliac crest below and the lower edge of the ribs above, i.e. measured on the right side in the mid-axillary line. Mark the mid-point with a water-soluble marker.

Pass the tape around the waist (for large subjects, ask them to help passing the tape around) and reinsert at front, positioning level at the waist.

Ask subject to breathe out gently and record measurement at the end of expiration to the last completed millimetre.

If you are not satisfied about the accuracy of your measurement, record a 1 in the appropriate coding box `problem'.

Move on to do the first hip circumference, and then repeat the measurement.

5.3.5 Hip circumference

Restrictions No restriction, unless participant is unable to stand to have his weight measured.
Site Flat surface
Preparation Participant wearing light clothing with shirt removed or tucked away – standing.
Equipment Circumference tape measure.

This is measured by placing the tape measure around the hips at the point of maximum circumference.

The tape should be horizontal, and the gluteal muscles not contracted. Record to the last completed millimetre. If you are not satisfied about the accuracy of your measurement, record a 1 in the appropriate coding box.

There is no need to ask the participant to breathe out (or in) for this measurement.

Repeat the measurement.

If you are not satisfied about the accuracy of your measurement, record a 1 in the appropriate coding box `problem'.

5.3.6 Upper Arm circumference (right side)

Restrictions No restriction, unless participant is unable to stand.
Site flat surface
Preparation participant wearing light clothing with shirt removed or tucked away – standing.
Equipment Circumference tape measure

Ask the subject to bend the R arm to 90^{o}.

Identify the acromial process and the lower tip of the olecranon.

Using the tape measure, identify the midpoint of the upper arm, between the acromial process and the lower tip of the olecranon and mark with a felt tip pen.

With the arm hanging down loosely at the side the arm circumference should be measured at this point with the tape measure to the last completed millimetre.

If you are not satisfied about the accuracy of your measurement, record a 1 in the appropriate coding box `problem'.

5.3.7 Skinfold thicknesses (right side)

Restrictions No restriction, unless participant is unable to stand
Site flat surface
Preparation participant wearing light clothing with shirt removed or tucked away – standing.
Equipment Skinfold caliper (Holtain)

Check that calliper reading set to zero before starting measurements.

Explain that you want to measure the thickness of the skin tissue behind the arm and shoulder.

Measure the **triceps skinfold** at the midpoint of the upper arm as marked above.

- Grasp the skin and subcutaneous tissue without muscle immediately above the mark.
- Apply the skinfold caliper, below the fingers holding the skinfold (continue to hold the skinfold throughout the measurements.
- Skinfold calliper dial should be horizontal for the triceps skinfold measurement.
- Place the callipers around the skinfold – count 1,2,3,4,5 and record the reading

Measure the **subscapular skinfold** immediately below the tip of the scapula.

- Scapula tip can be made more prominent by pushing arm forward, or by bringing up behind the back into a (gentle!) half-Nelson position.
- Mark the site at the scapular tip for the reading.
- Grasp the skinfold firmly (not too firmly!) and apply callipers immediately below fingers. Count 1,2,3,4,5 and record the reading.
- Skinfold calliper dial will tend to be oblique for the subscapular skinfold measurement.
- Record first measurements in each of the two sites and then repeat procedure.

5.3.8 Blood Pressure (right arm)

Restrictions	No restriction
Site	Flat surface
Preparation	Participant seated wearing light clothing
Equipment	Omron blood pressure recorder, multiple cuffs

The subject should sit down at the measurement table and rest their right arm on the table. This will ensure that the subject is sitting with their upper arm at chest level.

Apply the appropriate size of cuff on the basis of the information on arm circumference (already measured).

Arm circumference < 22 cm	small cuff
Arm circumference 22 to 32 cm	medium cuff
Arm circumference > 32 cm	large cuff

It should be placed around the upper arm with the bladder centre over the artery. Explain that the cuff will inflate and squeeze the arm during measurement.

Use of the instrument

During initial setting up, the Omron should have been set to take two measurements at one-minute intervals.

This is done by setting the function mode. Do this by pressing on/off button for more than 3 secs while `start' button is also pressed in. To move between function modes F1, F2 and F3, use the start button.

F1 setting = 2 (number of measurements)
F2 setting = 0 (delay to first measurement)
F3 setting = 30 sec (measurement interval)

Machine should then be set to `auto' and `average' ready for the first measurement.

To begin the process of blood pressure measurements, press `start' and start the timer to go off in two minutes. The machine will immediately inflate the cuff and begin the first reading. During the measurement the subject: -

- should not be encouraged to talk
- should be encouraged to keep the right arm still.

The result of the first reading will appear on the screen and should be written down while waiting for the second reading to be completed. The second measurement will be made after a one minute interval on the automatic cycle. While waiting for the second measurement, entries on cuff, instrument, room temperature and ethnic origin can be recorded.

Once the second reading has been made, the `deflate 1st 2nd 3rd ' button should be pressed successively to read off the second reading and reconfirm the first reading (do NOT record the average).

When the 2-minute alarm goes off, the participant should be asked to stand up and the `start' button pressed again to record two further standing blood pressure readings in exactly the same way as the sitting measurements already described.

(NOTE – it is crucial to write down the results of the sitting readings before the start button is pressed, because these readings will be deleted from the instrument).

While these readings are being made, note whether the participant reports faintness on standing or appears breathless and whether a problem with making four consecutive BP measurements.

Items recorded with blood pressure

- Cuff Mark down cuff size used as 1 (small) 2 (medium) and 3 (large).
- Instrument Will generally be 1, but a spare machine will be identified.
- Problem Unable to get 4 consecutive BP readings as in protocol, if this is the case problem = 1
- Faintness Subject reports being faint on standing up for BP measurement Y = 1
- Breathless Subject appears breathless on standing up for BP measurement Y = 1
- Room temperature Reading from digital thermometer

- Ethnicity –Based on the appearance of the individuals
  - Almost all subjects will be white European = 1

  Other codes should be based on the appearance of the individual are: -
  - black African-Caribbean = 2
  - South Asian (Indian, Pakistani, Bangladeshi) = 3
  - Chinese, Japanese, other Eastern = 4
  - Other or unclear = 5

5.3.9 Grip strength

- Sit the participant comfortably in a standard chair with legs, back support and fixed arms. Use the same chair for every measurement.

- Ask them to rest their forearms on the arms of the chair with their wrist just over the end of the arm of the chair – wrist in a neutral position, thumb facing upwards.

- Demonstrate how to use the Jamar handgrip dynamometer to show that gripping very tightly registers the best score.

- **Start with the right hand.**

- Position the hand so that the thumb is round one side of the handle, and the four fingers are around the other side (see picture). The instrument should feel comfortable in the hand. Alter the position of the handle if necessary. One can usually observe if the subject is uncomfortable.

- The observer should rest the base of the dynamometer on the palm of their hand as the subject holds the dynamometer. The aim of this is to support the weight of the dynamometer, but care should be taken not to restrict its movement.

- Encourage the participant to squeeze as long and as tightly as possible or until the needle stops rising. Once the needle stops rising the participant can be instructed to stop squeezing.

- Read grip strength in kilograms from the outside dial and record the result to the nearest 1kg on the data entry form.

Repeat measurement in the left hand.

- Do two further measurements for each hand alternating sides to give three readings in total for each side.

- The best of the six grip strength measurements is used in statistical analyses so encourage the subjects to get as high a score as possible.

- Ask `which is your dominant hand? (for writing) and record right, left or ambidextrous (people who can genuinely write with both hands).

- In `dominant' boxes, put 1 in L box or R box to indicate dominance; 1 in both boxes for ambidextrous.

Equipment: Model J00105 JAMAR Hydraulic Hand Dynamometer
Supplier: http://www.lafayetteinstrumenteurope.com/

5.4 Completion of station

- Escort participant to Station 2
- Ensure that any possessions are restored or stored for collection later.
- Records should be taken through to the next station.

5.5 At end of day

- Switch off all instruments; none of station 1 instruments require overnight charging.

5.6 SIMPLICATION OF STATION 1

If a participant cannot be measured completely, key priorities in Station 1 are: -

- Waist circumference
- Hip circumference
- Blood pressure (seated readings only x 2)

6.0 STATION 2 (RESEARCH DENTAL HYGIENIST) PROCEDURES

Includes: - Dental assessment and lung function test (spirometry).

6.1 On arrival

Research Hygienist will be responsible for setting up all relevant equipment on the station and for calibrating equipment for the station (spirometer).

6.1.1 CALIBRATION: Spirometer

Please ensure that spirometer is turned on early and left to warm up before testing.

Check paper supply.

Enter 'set up' mode and go to 1 'accuracy + calibration'. when the machine invites you to blow air through the flowhead to equilibrate temperatures, please blow 3 litres through slowly,
then 'continue'.

Set ambient (room temperature) consulting the electronic thermometer.

Pump 5 litres of air slowly (each litre must take more than 1 second) through the flowhead to calibrate and then 'exit'.

Read in 5.00 as reference volume and enter.

Update calibration if error is 1% or greater.

'Retest' by putting a further 5 litres of air through the flowhead. If error is 1% or greater update calibration again and retest one more time.

If calibration will not settle, raise threshold for correction to 3%.

When you have finished, move to main menu and to FVC test, and when the machine says 'perform blow', blow 1 litre through calibration syringe and record the result.

6.2 CALIBRATION AFTERNOON SESSION

- Recalibrate the Vitalograph as before.

6.3 Procedures for each subject

Research Hygienist will greet the subject, checking his identity on arrival and take the data sheet and Questionnaire.

6.4 Dental examination

Oral health assessment will comprise a tooth count, recording dentures, functional occlusal pairs, brief periodontal examination, soft tissue lesions, dryness score.

Restrictions none unless participant is unable to open mouth wide or refuses dental assessment.

Preparation participant to lie on couch reclining at 45 degrees.

Equipment disposable dental probe, mouth mirror, tray, gloves, head torch, pen.

6.4.1 Briefing subjects

Very briefly explain the dental examination:

- I would like to do a simple dental assessment which will take a few minutes.
- I will do a tooth count and look at the gums of your teeth and will not disturb any existing dental work or fillings.
- If you would like to close your mouth at any time, please indicate by raising your left hand.
- I will use a mirror and a blunt instrument/probe, no sharp instrument; it will not be painful.
- This examination is for only study purposes to specifically examine your gum tissue. I will be calling out numbers that have meaning only for this study.

6.4.1.1 Check if subject has:

Dentures: ask to remove denture(s) and place in disposable tray.
If complete dentures in upper and lower arch, enter tooth count (=0) and occlusal pairs (=0) on data sheet.

Implants: this is a whole tooth replacement not just a crown. Ask subject to point to implant if he has one. **Do not probe gums around implants**. This age group is unlikely to have implants.

Difficulty in opening mouth wide: "do you have any problems opening your mouth wide?". If difficulty in opening or clicking of jaw, ask subject to open only as much as he can. If history of dislocation of jaw on opening mouth wide, do not perform examination.

6.4.2 Examination light (head torch):

Adjust and position the head light while asking the subject to open his mouth.

6.4.3 Dictaphone should be placed on the desk and switched on.

When ready for examination, press 'play' on Dictaphone. All measurements will be spoken out loud to record data on the Dictaphone.

6.4.4 Gloves and examination kit:

- Put on gloves when ready for examination.
- Open the sterile instrument kit which has a mouth mirror and a CPITN probe.
- Mouth mirror is to be held in left hand and probe in the right hand. Mouth mirror is used both for retraction of cheek/lips and for viewing posterior (back) teeth.

Correct grasp of probe "modified pen grasp" – note the corner contact points of middle finger and thumb; handle rests against bony area of knuckle.

6.4.5 Examination

Start with saying the batch number to record on the Dictaphone – "batch number …".

Teeth must be examined in the following order:

Always begin from upper right last (distal most) tooth to upper left last tooth; lower left last (distal most) tooth to lower right.

6.4.5.1 Tooth count:

Use the mouth mirror (left hand) to gently retract the cheek for better visibility of the posterior teeth and use the probe to count the teeth (right hand).

Count teeth in the upper arch starting from the right and call out "Upper arch …teeth".

Lower arch: start counting from the last tooth (distal most) in the lower left arch.
Count teeth in the lower arch and call out "Lower arch …teeth".

Root stumps (without crown) are not to be included in tooth count; broken tooth can be included even if crown is broken.

6.4.5.2 Dentures

Record denture wearing. 1=yes, 2=no if wearing any dentures; complete denture upper or lower; complete overdenture; implant retained denture; and whether denture examined.

Partial upper and/or lower denture – record teeth replaced on data sheet.

6.4.5.3 Functional pairs

- The examination is conducted without dentures.
- This examination is conducted only if there are some natural teeth in both arches.

Posterior occlusal contacts – left and right (premolars and molars)
The assessment of occlusal contacts refers to occlusal contacts between **natural teeth and the pontics of fixed bridges only.**

- A contact is the same as an occlusal stop.
- Ask the subject to close together normally on the back teeth (sometimes the phrase "clench your back teeth together" is the most effective). If they have any difficulty with this, ask them to swallow and keep their teeth closed after swallowing.
- Then using a mirror to hold back the cheek, look at the lower arch from the side and record the distribution of contacts.
- There are potentially eight occlusal units each on right and left sides.
- Coding takes place from the first premolar backwards as this makes it much easier to keep track of the position.
- Just look at each side in turn and work out whether or not there is a NATURAL contact between a lower pre-molar and another natural tooth, then between lower molar and another natural tooth.
- **The presence of a contact is determined by the lower tooth** (i.e. does the natural lower or bridge pontic contact with any natural upper or pontic) and is coded as a "1" even if the area of contact is small.

- A bridge pontic or implant counts as a natural tooth – it is supported by one – but a denture does not).
- There can be no contact if there is no lower tooth in that zone.
- In some cases, it may be difficult to tell whether the teeth actually touch or not, you should assume that they do if you are in doubt.
- An occlusal unit is a single premolar or half a molar (mesial or distal) – record each unit if present as 1 on data sheet; if absent record as 0.

Anterior functional pairs

After the grid for posterior occlusal units is completed, record anterior contacts present.
There are potentially up to three anterior pairs or units of contact each on right and left sides.

- Record functional pair based on lower tooth if in contact with an upper tooth.

Where there is no contact, the subject should be asked to bite edge to edge to see if contact can be obtained.

Where there is a deep overbite, this may be very difficult to assess accurately, so it should just be estimated if there is a problem. Again, actual contact is not strictly necessary if the participant can achieve some sort of contact by protrusion of the mandible. A phrase such as "can you bite on your front teeth like this", with the examiner demonstrating incisal contact may be used if there is any problem.

If any pair of anterior teeth can contact, it is coded as present.

Record two further questions:
1. "How many natural posterior teeth (upper or lower) have no opposing natural tooth?"
2. "How many natural posterior teeth (upper or lower) are opposed only by denture?"

These are self-explanatory and are easily assessed by visual examination with the teeth together, although where there are partial dentures, they will often have to be inserted prior to this part of the examination. This is to identify how many teeth are non-functional.

6.4.5.4 Soft tissue pathology

A brief visual examination of the lips and perioral tissues is conducted. Most intra-oral areas can be easily visualised during the dental examination, however several areas MUST be visualised specifically.

These are:

1. Floor of mouth. Mouth mirror used to gently deflect tongue to right and left.
2. Mucosal surface of lips. The upper and lower lips are gently inverted to visualize.
3. Buccal sulci. The mouth is half closed and the cheeks gently retracted.
4. Soft palate - visualise directly or using mouth mirror if needed.

Record Soft tissue lesion(s) as follows: -

For each type, tick Yes box if present, tick No box if absent.

1) None
2) Angular cheilitis - inflammation with or without cracking localised to one or both commisures.
3) Denture stomatitis – denture bearing area associated with patchy or localised redness or generalized redness; or multiple small nodular or granular lesions covering denture bearing area with associated inflammation.
4) Denture hyperplasia - is a firm enlargement of the vestibular mucosa, clearly related to the flange of a denture.
5) Ulcer associated with denture trauma - any ulcerated lesion which is believed to be due to trauma alone and not any other pathological process (e.g. malignancy).
6) Other – any lesion other than above.

NOTE: More than one of these lesions can be recorded as these are not mutually exclusive.

6.4.5.5 Clinical dryness score

This is a quick visual assessment using a mouth mirror to assess symptoms associated with dryness of mouth.

Record if any of these are present (Yes=present, No=absent)

1) Mirror sticks to buccal mucosa
2) Mirror sticks to tongue
3) Frothy saliva
4) No saliva pooling in floor of mouth
5) Tongue shows loss of papillae
6) Altered/smooth gingival architecture
7) Glassy appearance of other mucosa, especially palate
8) Tongue lobulated/ fissured
9) Active or recently restored (last 6 months) cervical caries >2 teeth
10) Debris on palate (excluding under dentures)

NOTE: More than one of the above can be recorded as these are not mutually exclusive.

6.4.5.6 Periodontal measures

Three periodontal measures assessed:

- Loss of attachment: Two sites to be measured on the buccal side of each tooth (facing the cheek) – mesial and distal.
- Pocket depth: One site (mesial) to be measured for pocket depth.
- Bleeding if in response to probing

Order of assessment: start from upper right 7 (second molar) to upper left 7, then lower left 7 to lower right 7.

Insert the probe gently in the mesial site to measure the depth of the space between the tooth and gum tissue.

Loss of attachment (LoA) is measured from neck of tooth (junction of crown and root) to base of pocket (as far as the probe goes). Neck of tooth can be identified as either a line along the crown of the tooth, or by darker shade of root surface.

Insert the probe in the distal site of tooth 1 and similarly measure loss of attachment.

Pocket depth: Insert probe on mesial site again and measure pocket depth from gingival crest (top of gum) to base of pocket (as far as the probe goes).

IF DICTAPHONE USED to record measures: Call out scores for the 3 measures for each tooth as follows -
"Tooth number** mesial …, distal …., pocket …; Tooth 2 mesial …, distal …., pocket …".

Similarly, measure LoA and pocket depth in other teeth. If in doubt, record the lower score.

Score to measure loss of attachment and pocket depth:

0 = First probe band - Up to 3.5 mm
1 = First dark band - 4-5.5 mm
2 = Between two dark bands - 6-8.5 mm
3 = Second dark band - 9+ mm
8 = Unscorable
9 = Missing tooth in sextant

(Score 8 should only be used if the pocket cannot be probed either because of discomfort or because there is a physical barrier e.g. a large shelf of calculus or filling).

When probing lower anterior tooth, retract lower lip gently with left hand if needed – tense muscles of lower lip maybe difficult to retract with mouth mirror.

Adequate lighting is crucial for reliable measurements – adjust light and headlight as needed during examination.

Bleeding on probing:

Upper arch:

After measuring loss of attachment and pocket depth in the upper arch, go back to visually check all teeth starting from upper right to see if bleeding in response to probing at the 2 sites (mesial and distal). Retract the cheek to observe posterior teeth.

There may be a delay of approx. 20 seconds for bleeding to occur after probing.

Record bleeding on probing as:

Score:
0 – no visible bleeding
1 – evidence of bleeding
9 – missing tooth in sextant

Call out bleeding scores as:
"Measure 2; tooth 1 mesial…; distal…;Tooth 2 mesial…; distal …Tooth 2 mesial …; distal …"

The subject may close his mouth for a couple of seconds before probing teeth in lower arch.

Lower arch:

After recording LoA and pocket depth in lower arch, look for bleeding in the same way as upper arch starting from lower right 7.

Call out bleeding scores as:
"Measure 2; tooth 4 mesial…; distal…;Tooth 5 mesial…; distal …Tooth 6 mesial …; distal …"

Press the 'stop' button on the Dictaphone to stop recording.

6.4.6 After examination

Ask the subject to put on dentures if removed.

6.4.7 Disposal of gloves, probe, mirror:

Gloves should be removed inside out and disposed with clinical wastes. Mouth mirror and probe are to be disposed in sharps bin.

6.4.8 Transcribe data from Dictaphone to data entry sheet:

At the end of Station play back the recording to transcribe data recorded to the data entry sheet.

NOTES for Probe grasp:

The probe is to point toward the apex of the tooth, parallel to the long axis of the tooth. If tooth is tilted the probe should be aligned according to the position of the tooth.

The probe is to be held with a light grasp not to exceed 20 grams – it should be possible to remove the probe from the examiner's hand without resistance.

Do not exert force greater than 20 grams. Probing should not cause pain or blanching of the gum tissue, if it does, too much pressure is being exerted. As an indication of the force required when probing, place the probe below your fingernail, this should not be painful if the appropriate pressure is used.

Possible concerns that might be raised by subjects and appropriate responses:

- Treatment: Assure him that the exam will not include any treatment or procedure. Only a mirror and a blunt-ended hand instrument will be used to examine the gums of few teeth.

- Qualifications of the examiner/advice on dental health: The examiner is a dental hygienist but cannot comment on state of gums as this is not a proper check of gums.

- Existing dental work: The exam will not interfere with any existing dental work such as fillings, crowns or bridges.

- Pre-existing medical conditions: If subjects raise the issue of pre-existing medical conditions the following statement may be helpful "In the past there was a policy not to examine the gums of some patients with some heart problems or joint replacements. However, the National Institute for Clinical Excellence (NICE) has recently reviewed the evidence in this area and concluded that there is no significant risk from the examination of teeth and gums. Our policy is in line with this, but if you prefer not to have the gum examination, please let me know." In this case, ask for permission to do only a tooth count or measures other than periodontal measures.

6.5 SPIROMETRY

Equipment: **Instrument 1:** Vitalograph Compact II (used in BRHS Town 21 (Bedford) for 36 subjects)
Instrument 2: Vitalograph Compact II (used in BRHS Town 21 (Bedford) for 11 subjects)
Instrument 3: Vitalograph Alpha Touch device **– used in all other towns**

Note: There was instrument failure during the fieldwork in BRHS town 21 at the very start of the study. A back-up instrument (instrument 2) was used which subsequently also failed. A 3rd instrument was purchased and used in the remaining 23 BRHS towns.

Preliminary explanation to subject. "We would like to measure the size of your lungs by asking you to blow into this machine.

Contraindications - There are no absolute contraindications to spirometry, but common sense should be exercised. Defer spirometry until about six weeks in patients who have had: -

- pneumothorax
- eye, ear chest or abdominal surgery
- myocardial infarction or stroke

Then proceed with instructions:

“What I want you to do is to take a very big breath in and to blow out as hard and as long as you can, until your lungs are empty. Watch me."

(Demonstration by nurse using mouthpiece)

Subject then practices once: ensure that: -

full breath in
lips tightly around mouthpiece
long hard blow right to the end

Before measurements are made, check about use of inhaler use within last 24 hours, and record the time of last inhaler use.

Before starting the test enter the subject's 3-digit batch number and press the 'enter' key in order to proceed.

On the main menu press 'FVC test'. The machine will then say 'perform test', indicating that it is ready for the first blow.

We want to record three definitive blows. Encourage the subject with the first blow `big breath in….and out…. blow, blow, blow…right to the end’.

After each blow, press 'end test' to expedite results and then 'retest' to go on to the next test.

The machine takes a short period to calculate results, after which FVC, FEVI and PEF figures will then be displayed on the screen. Once the results of each of the first two blows are displayed press 'retest' and the machine will display 'perform test' to indicate readiness for the next reading.

Once the result of the third reading is recorded, check the `best test variation' which is recorded on the screen. If best test variation is more than 5% after 3 readings, please take an additional reading by pressing 'retest' again.

If you are not satisfied that subject has done an adequate blow on at least one reading, please enter 1 in the `problem' box.

Once the 3 (4) readings are complete, press 'end test' to return to the main menu. Press 'print' and then 'selected' to print out the results. The printed output should be stapled onto the front of the data sheet in the space provided. Then press the 'new patient' category and agree to delete old patient's results. This will leave the machine waiting for the next subject's serial number to be entered in due course.

Changing printer paper

Open the printer slot.

Feed the paper in from R side from the lower side of the roll with the printer release switch pushed or held over to L side. The paper may slide through or can use `paper feed' on lower L panel of main menu to drive paper through – this will only function when the printer release switch is pushed to the L side.

In the event of Vitalograph printer failure

Please record the number of readings and the best test variation directly from the screen before leaving the test screen. Then on main menu press option 5, display results, and write down the other parameters on the data sheet.

6.6 End of Station

Escort participant to Station 3.

6.7 Research Hygienist tasks at the end of day

- Check data sheets are complete and transcribe any data recorded on Dictaphone.
- Switch off spirometer.

6.8 SIMPLICATION OF STATION 2

If a participant cannot be measured completely, key priorities in Station 2 are: -

- Tooth count if time permits

7.0 STATION 3 (RESEARCH PHLEBOTOMIST) PROCEDURES

Blood test, height, weight and body composition

7.1 On arrival

Research Phlebotomist will be responsible for switching on all equipment on the station and for calibrating equipment for the station (stadiometer).

- Set up relevant equipment
- Prepare blood syringes and collection tubes for the morning and (if possible) afternoon session, following the appointment list for the day

7.2 CALIBRATION AND CHECKING OF INSTRUMENTS

The following calibration steps should be undertaken: -

7.2.1.1 Stadiometer

Please check recorded height of standard 1 metre rule once instrument set up, and record result. (This ensures that recorder has not become displaced).

7.2.2 Tanita body composition

- Check paper supply.
- Calibrate the Tanita Viscan, following the manual instructions: -
    - stand the instrument on a flat surface
    - make sure nothing stands between the distance sensors
    - turn on the unit
    - press the `O over 130 cm' key for about 2 seconds, using a pen tip
    - `CAL' will be displayed
    - press the `start' button to begin the calibration
    - (NEVER switch instrument off during calibration, when oooo symbols appear!)
    - Once finished the instrument will display `CAL End' and it will turn itself off.

NOTE

Due to issues with data inputs into the Tanita machine, the integrity of the body composition outputs has been compromised. As a result, the data is not being made available.

7.3 Procedures for each subject

Research Phlebotomist will greet the subject, checking his identity on arrival and take the data sheet and Questionnaire.

7.3.1 HEIGHT

Restrictions none unless participant is unable to stand to have his/her height measured

Site flat surface

Preparation participant not wearing shoes

Equipment Harpendon stadiometer

The participant is asked to stand on the stadiometer facing forwards, and as tall as he can. The Research Nurse should check for the following points: -

- FEET: ankles should be together and resting on the bar at the back,
- ARMS: should be resting by sides, not behind or in front,
- BACK: should be as straight as possible
- HEAD: subject should look straight ahead (i.e. lower edge of orbit is in line with external auditory meatus [earhole]) – this is the Frankfort plane, should be horizontal.

The index fingers of both hands should then be placed below the mastoid process on each side. During inspiration the increase in height should be maintained and during expiration a gentle stretch should be applied.

Then bring down headplate gently, record height to last completed millimetre.

Particular care is needed to ensure that the participant does not stand on tiptoe.

Record any problems which the patient has which may lead to underestimation of height in the `problem with height' box.

Any problem = yes = 1

CHECK – Make sure can set up and take down the stadiometer.

7.3.1.1

NOTE

Corrections to Height Measurements

Due to issues with the stadiometer—specifically, a displacement of the height recorder—in two of the towns, height measurements were systematically underestimated. To address this, the field team conducted calibration checks using a one-meter ruler before the morning and afternoon examination sessions each day. The discrepancies were recorded by date and session. These data were then used to correct the height measurements accordingly.

7.3.2 WEIGHT AND TANITA MA418BC BODY COMPOSITION

Ask participant if he has a pacemaker, which also includes a defibrillator.

If he HAS a pacemaker or defibrillator, he should NOT have measurements with the Tanita body composition monitor but should be weighed with the simple Tanita scales.

If he does NOT have a pacemaker or defibrillator, he should have measurements with the Tanita body composition monitor and should not be weighed with the simple Tanita scales.

7.3.2.1 PARTICIPANT HAS PACEMAKER/DEFIBRILLATOR

Site - flat surface

Preparation – participant wearing light clothing and not wearing shoes, all heavy items removed from pockets.

Equipment – Tanita scales (NOT the Tanita body composition monitor)

Use of Tanita scales (pacemaker cases): -

Participant should stand straight if possible - leaning to one side (or forwards) can affect the weight recorded. If the weight registered is between two 0.1 kg marks, take the lower one.

7.3.2.2 PARTICIPANT DOES NOT HAVE PACEMAKER/DEFIBRILLATOR

Use of body composition analyser: **Tanita BC-418 (non-pacemaker cases)**

Enter information on the following: -

- clothing weight (1 kg)
- age (whole years) from data sheet label
- gender
- height (cm)
- fitness designated as normal.

Participant stands on scales for weighing and then grasps handles for body composition measurements when instructed to do so.

Printout is automatically produced and stapled to the datasheet (minimum 2 staples)

7.3.2.2.1 Body composition measurements

NOTE – Body composition measurements

Due to issues with data inputs into the Tanita machine, the integrity of the body composition measurements/outputs has been compromised. As a result, the data is not being made available.

7.3.2.3 Derived weight variable

WEIGHT (q40weight)

Weight measurements taken either using the Tanita Body Composition machine or ordinary digital scales (for individuals with a pacemaker) have been combined into a single variable, q40weight.

7.3.3 Blood sampling

The blood sample will be taken at the end of the examination. The blood sample should be taken with the subject lying down.

We would like to ask you to give us a blood sample for the measurement of factors related to the heart and circulation – would that be OK?

Check whether the subject has had previous problems with blood sampling.

Alcohol swabs will be provided for skin cleaning where needed - allow to dry after use.

A tourniquet may be used throughout. Wear the rubber gloves provided for taking the sample. A 21-gauge butterfly needle (or Sarsted needle) should generally be used; a supply of 23 gauge needles will also be supplied for more exceptional use.

A maximum of three attempts may be made in the different arms if the subject consents. No further attempt to obtain blood should be made.

There are nine collection tubes which will be prepared in advance. They should be taken in the order specified on the separate protocol, with citrate tubes (x2) taken first followed by serum tubes (x3), followed by EDTA tubes (x3) followed by fluoride-oxalate (x1).

After venepuncture, raise subject's arm and encourage subject to press firmly on cotton wool pad to avoid bruising. Plasters are provided. Please check for elastoplast allergy - if present, use cotton wool and tape.

After venepuncture the tubes should be gently agitated and placed in a rack. Please label the tubes with the appropriate serial number labels, sticking an extra label copy in the space provided on the data sheet. Please record: -

- the full success/partial success/failure of sampling
- the reason for failure if appropriate
- the time of venepuncture
- the time when the participant last ate
- if partial success, which of the `primary' collection tubes have blood in them

Bloods should be sorted by individual subject. The serum tubes will be taken apart for centrifugation at least 30 minutes after collection (see below) and then restored to the main sample base collection.

BRITISH REGIONAL HEART STUDY

BRHS 40 year follow-up physical examination (Q40)

Datasheet 2018 Assessment

NAME:
STUDY ID:
DOB:
AGE
GP Details:

Please amend details if incorrect

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STATION 1

Affix Label: Serno/batch

Observer Initials ☐☐ Time ☐☐:☐☐ (24 hr)

Chair rise (5 times)
If No – : 1= refused 2= disability ☐ Secs: ☐☐.☐☐ N at 30 sec? ☐ Used hands? (Yes=1) ☐

Gait speed (walk 3 meters)
If No – : 1= refused 2= disability ☐ Secs: ☐☐.☐☐ Used w/aid ☐ Incomplete at 30 secs (Yes=1) ☐

MEASUREMENTS

				Problem P=person T=technical
Calf circ 1(cm)	☐☐☐.☐			Problem ☐ P/T
Waist circ 1	☐☐☐.☐	waist circ2	☐☐☐.☐	Problem ☐ P/T
Hip circ 1	☐☐☐.☐	Hip circ 2	☐☐☐.☐	Problem ☐ P/T
Arm circumf	☐☐☐.☐			Problem ☐ P/T
Triceps 1	☐☐.☐	Triceps 2	☐☐.☐	Problem ☐ P/T
Subscapular 1	☐☐.☐	Subscap 2	☐☐.☐	Problem ☐ P/T

BLOOD PRESSURE

Cuff size : Arm circ < 22 cm = **1** (small) 22-32 cm = **2** (medium) >32 cm = **3** (large)

Cuff used ☐ Instrument ☐ Problem ☐ P/T

Blood pressure	Sitting 1	Sitting 2
Systolic (mmHg)	☐☐☐	☐☐☐
Diastolic (mmHg)	☐☐☐	☐☐☐
Heart Rate (per min)	☐☐☐	☐☐☐

Room temp(^{0}C) ☐☐.☐ Ethnicity ☐ **1**=WE **2**=BAC **3**=SA **4**= Ch/J/O **5**= Other

Grip Instrument ☐

	1	2	3		
Grip strength (Right hand) kg	☐☐	☐☐	☐☐	R Dominant (Yes=1) ☐	Problem ☐ P/T
Grip strength (Left hand) kg	☐☐	☐☐	☐☐	L Dominant (Yes=1) ☐	Problem ☐ P/T

STATION 2: ORAL HEALTH

Observer initials ☐☐ No examination ☐ REASON: 1=Refusal, **2**= unable to open mouth, **3**=other

	UPPER			LOWER		
Dentures	Yes	No	Yes/Not worn	Yes	No	Yes/Not worn
(please tick)	1	2	3	1	2	3
Wears a denture?						
Full denture ?						
Partial denture ?						
Implant retained denture ?						
Complete overdenture?						
Denture/s examined?						

PARTIAL DENTURE(S) PRESENCE OF TEETH ON

	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
UPPER																
	48	**47**	**46**	**45**	**44**	**43**	**42**	**41**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**
LOWER																

1 = Tooth replaced on partial denture Blank = Teeth not replaced by partial denture

FUNCTIONAL PAIRS	RIGHT							
Posterior	**8D**	**8M**	**7D**	**7M**	**6D**	**6M**	**5**	**4**

LEFT							
4	**5**	**6M**	**6D**	**7M**	**7D**	**8M**	**8D**

	RIGHT		
Anterior	**13**	**12**	**11**

LEFT		
21	**22**	**23**

1=Contact present 9=Absent

☐☐ **Number of natural posterior teeth (upper or lower) with no opposing natural tooth**

☐☐ **Number of natural posterior teeth (upper or lower) opposed only by denture**

NATURAL TEETH

TOTAL UPPER

TOTAL LOWER

PRESENCE OF NATURAL TEETH

18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
48	**47**	**46**	**45**	**44**	**43**	**42**	**41**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**

Reference
9=Missing; 1=Present; 2=Implant; 3=rootstump

PERIODONTAL MEASURES

	17	17	16	16	15	15	14	14	13	13	12	12	11	11
	D	M	D	M	D	M	D	M	D	M	D	M	D	M
LA														
PD														
GB														

	21	21	22	22	23	23	24	24	25	25	26	26	27	27
	M	D	M	D	M	D	M	D	M	D	M	D	M	D
LA														
PD														
GB														

	47	47	46	46	45	45	44	44	43	43	42	42	41	41
	D	M	D	M	D	M	D	M	D	M	D	M	D	M
LA														
PD														
GB														

	31	31	32	32	33	33	34	34	35	35	36	36	37	37
	M	D	M	D	M	D	M	D	M	D	M	D	M	D
LA														
PD														
GB														

LA=Loss of attachment **PD**=pocket depth **GB**=Gingival bleeding

GB score: **0**=No **1**=yes **8**=unscorable **9**=Missing tooth

Clinical oral dryness score (please tick)		**Yes**	**No**
		1	2
1	Mirror sticks to buccal mucosa		
2	Mirror sticks to tongue		
3	Frothy saliva		
4	Saliva pooling in floor of mouth		
5	Tongue shows loss of papillae		
6	Altered/smooth gingival architecture		
7	Glassy appearance of other mucosa, especially palate		
8	Tongue lobulated/ fissured		
9	Active or recently restored (last 6 months) cervical caries >2 teeth		
10	Debris on palate (excluding under dentures)		

Soft tissue lesion(s) (please tick)		**Yes**	**No**
		1	2
1	None		
2	Angular cheilitis		
3	Denture stomatitis		
4	Denture hyperplasia		
5	Ulcer associated with denture trauma		
6	Other		

Reference
LA/PD score
0 = 0 to 0.5 mm
1 = 0.6 to 3.5 mm
2 = 3.6 to 5.5 mm
3 = 5.6 to 8.5 mm
4 = 8.6 to 11.5 mm
8=Unscorable
9 = Missing tooth

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STATION 2 : SPIROMETRY

Observer Initials ☐☐

Contraindications:

	YES
Collapsed lung/pneumothorax in last 6 weeks?	☐
Heart attack or Stroke in last 6 weeks?	☐
Ear, Eye, chest or abdominal surgery in last 6 weeks	☐

Do <u>not</u> proceed to spirometry if YES to ANY of the above.

SPIROMETRY **Instrument** ☐ **Time 24h** ☐☐:☐☐

	YES
Chest Infection in last 6 weeks	☐
Inhaler used in last 24 hours	☐

BTV % ☐☐·☐

Problem ☐ **P/T**

P= participant performance
T= instrument problem

SPIROMETRY DATA **Please staple printout HERE**	
⬇	Ref number ☐☐☐ N blows ☐☐ BTV % ☐☐☐ FVC ☐☐☐ FEV1 ☐☐☐ FEV0.5 ☐☐☐ PEF ☐☐☐ FEF25-75% ☐☐☐ FEF75-85% ☐☐☐ FEF25% ☐☐☐ FEF50% ☐☐☐ FEF75% ☐☐☐

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STATION 3

Observer Initials ☐☐

Problem
P=person T=technical

Height (cm) ☐☐☐.☐ Problem? ☐ P/T

Weight
TBC weight – set to automatically subtract 1kg for clothes

Pacemaker? No ➡ TANITA BODY COMPOSITION ☐☐☐.☐ **(kg)** Problem? ☐ P/T

Yes ➡ SCALES ☐☐☐.☐ **(kg)** Problem? ☐ P/T

BLOODS

Time (blood test) ☐☐:☐☐ (24hour)

Fasting instructions followed? ☐ **1**=YES **2**=NO **3**=DIABETIC

Time last eaten? ☐☐:☐☐ (24hour)

Day last eaten? ☐ **1**=TODAY **2**= YESTERDAY

ID AFFIX BLOOD LABEL HERE

Blood Test Success? ☐ FULL=**2** PART=**1** NONE=**0** Problem? ☐ **1**=REFUSAL **2**=TECHNICAL

IF blood sample is incomplete (ie "PART" sample) – mark complete tubes with **1**

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

A B C DE FJ K LN PS T

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Station 3: **BIOIMPEDANCE DATA**

Please staple BIOIMPEDANCE printout here	**BIOIMPEDANCE DATA** TANITA BODY COMPOSITION ANALYSER – (Print out stapled)
⇩ **Staple here** **NOTE** **Due to issues with data inputs into the Tanita machine, the integrity of the body composition outputs has been compromised. As a result, the data is not being made available.** **Staple here**	Date DD MM YYYY Time (24hr) □□□□ Body type Standard=1/Athletic=2 □ Gender Female=1/Male=2 □ Age □□ Height □□□ cm Weight □□□ □ kg BMI □□ □ kg/m2 BMR □□□□ kJ □□□□ Kcal Fat % □□ □ % Fat mass □□ □ kg FFM □□ □ kg TBW □□ □ kg Visceral fat rating □□ --- IMPEDANCE Whole Body □□□□ Right leg □□□□ Left leg □□□□ Right arm □□□□ Left arm □□□□ Segmental Analysis Right leg Fat % □□ □ % Fat mass □□ □ kg FFM □□ □ kg Predicted Muscle Mass □□ □ kg Left leg Fat % □□ □ % Fat mass □□ □ kg FFM □□ □ kg Predicted Muscle Mass □□ □ kg Right arm Fat % □□ □ % Fat mass □□ □ kg FFM □□ □ kg Predicted Muscle Mass □□ □ kg Left arm Fat % □□ □ % Fat mass □□ □ kg FFM □□ □ kg Predicted Muscle Mass □□ □ kg Trunk Fat % □□ □ % Fat mass □□ □ kg FFM □□ □ kg Predicted Muscle Mass □□ □ kg

Station 3: BRHS CONSENT FORM

Affix Label: Serno/batch

BRITISH REGIONAL HEART STUDY ASSESSMENT 2018

Please write your initials inside the box to indicate if you agree with each statement, or leave blank if you disagree.

	AGREE
1. I have read and understand the Information Leaflet, and have had the opportunity to ask questions**.**	
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	
3. I give permission for the results of the blood tests and the clinical measurements made today to be available to my doctor.	
4. I give permission for long-term storage and use of my blood samples for health-related research purposes (even after my incapacity or death).	
5. I am willing to continue with existing permissions for access to my medical and other health-related records*, and for long-term storage and use of this and other information about me, for **health-related research purposes** (even after my incapacity or death).	
6. I give permissions for linkage to my dental care records	

I agree to allow the Research Team to continue to study my health in accordance with the criteria above. I understand that any details recorded will be treated in complete confidence.

Signed _____

Print name _____ Date: _____

Researcher: Initials _____ Date: _____

*Medical and other health-related records from agencies related to the National Health Service: NHS Digital Hospital Episode Statistics (HES), Minimum Mental Health Dataset (MMHDS)- Diagnostic Imaging Dataset (DIDS)-, the General Register Office, Cancer Registry, Primary Care Patient Registration Service.

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