BOX 1: FINAL EQUATION FOR THE PREDICTION OF FAT MASS IN CHILDREN AGED 4-15 YEARS

exp = exponential function, ln = natural logarithmic transformation.

BA, SA, AO and Other = 1 if child is of black, south Asian, other Asian, or Other ethnic origins respectively and = 0 if not.

If child is of unknown ethnic group, treat as of White ethnic origins.

Height is measured in metres, weight in kilograms, age in years and fat mass in kilograms.

Example 1 –

For a 6-year old White male with a height of 1.4m and a weight of 37kg, Fat Mass would be estimated as:

= 37 – exp[ 0.3073\*1.42 – 10.0155\*37-1 + 0.004571\*37 + 0.01408\*0 – 0.06509\*0 – 0.02624\*0 – 0.01745\*0

– 0.9180\*ln(6) + 0.6488\*60.5 + 0.04723\*1 + 2.8055

= 37 – exp[ 3.2979]

= 37 – 27.0549

= 9.95 kg

Example 2 –

For a 12-year old Black female with a height of 1.6m and a weight of 42kg, Fat Mass would be estimated as:

= 42 – exp[ 0.3073\*1.62 – 10.0155\*42-1 + 0.004571\*42 + 0.01408\*1 – 0.06509\*0 – 0.02624\*0 – 0.01745\*0

– 0.9180\*ln(12) + 0.6488\*120.5 + 0.04723\*0 + 2.8055

= 42 – exp[ 3.5262]

= 42 – 33.9929

= 8.01 kg