

Supplementary Table 1. Burke's scale for acanthosis nigricans (adapted)

Location	Score	Description
Neck severrity	0	Absent: Not detectable on close inspection.
	1	Present: Clearly present on close visual inspection, not visible to the casual observer, extent not measurable.
	2	Mild: Limited to the base of the skull, does not extend to the lateral margins of the neck (usually <7.6 cm in breath).
	3	Moderate: Extending to the lateral margins of the neck (posterior border of the sternocleidomastoid) (usually 7.6–15.2 cm), should not be visible when the participant is viewed from the front.
	4	Severe: Extending anteriorly (>15.2 cm), visible when the participant is viewed from the front.
Axilla	0	Absent: Not detectable on close inspection.
	1	Present: Clearly present on close visual inspection, not visible to the casual observer, extent not measurable.
	2	Mid: Localized to the central portion of the axilla, may have gone unnoticed by the participant.
	3	Moderate: Involving entire axillary fossa, but not visible when the arm is against the participant's side.
	4	Severe: Visible from front or back in the unclothed participant when the arm is against the participant's side.
Neck texture	0	Smooth to touch: No differentiation from normal skin to palpation.
	1	Rough to touch: Clearly differentiated from normal skin.
	2	Coarseness can be observed visually, portions of the skin clearly raised a bove other areas.
	3	Extremely coarse: "Hills and valleys" observable on visual examination.
Knuckles	0	Absent
	1	Present
Elbows	0	Absent
	1	Present
Knees	0	Absent
	1	Present

Supplementary Table 2. Cutoff values for insulin and HOMA-IR for defining hyperinsulinemia and insulin resistance

	Tanner stage	Percentile	Girls	Boys	Reference No.
Insulin (μUI/mL)	I–II	≥90th	17.8	14.0	17
	III–IV		22.2	17.7	
	V		≥ 15.05	≥ 15.05	18
HOMA-IR	I–II	≥90th	4.1	3.2	17
	III–IV		5.0	4.2	
	V		≥ 3.43	≥ 3.43	18

HOMA-IR, insulin resistance assessment.