Supplementary Table S6. Item blueprint, English translation, and answer key for the full 27-item CCKT item pool

Items shaded in colour were excluded prior to or during main validation. White/light-blue rows constitute the final CCKT-18 (n = 18). Bloom's levels: Recall = knowledge retrieval; Understanding = comprehension of concepts/mechanisms; Application = clinical decision-making using WHO MEC criteria. COC = combined oral contraceptive; Cu-IUD = copper intrauterine device; DMPA = depot medroxyprogesterone acetate; MEC = Medical Eligibility Criteria; POP = progestin-only pill; STI = sexually transmitted infection.

No.	Item statement (English translation)	Domain	Bloom's level	Answer key	Disposition
B1 — General reproductive health knowledge (Items B.1.1–B.1.6)					
B.1.1	No contraceptive method is 100% effective in all circumstances.	B1	*Recall*	**True**	**Excl. — a < 0.80 (Phase 4)**
B.1.2	In a typical menstrual cycle, the post-menstrual phase is an absolutely safe period for unprotected intercourse.	B1	*Recall*	**False**	**Excl. — a < 0.80 (Phase 4)**
B.1.3	Traditional contraceptive methods (calendar/rhythm method, withdrawal, etc.) are as effective as modern hormonal methods (oral contraceptive pills, implants, hormonal IUDs, etc.).	B1	*Understanding*	**False**	**Excl. — a < 0.80 (Phase 4)**
B.1.4	Pregnancy cannot occur during a woman's first sexual intercourse.	B1	*Recall*	**False**	**Excl. — a < 0.80 (Phase 4)**
B.1.5	The withdrawal method (coitus interruptus) does not protect against sexually transmitted infections (STIs).	B1	*Recall*	**True**	**Excl. — a < 0.80 (Phase 4)**
B.1.6	The timing of ovulation can vary between cycles in the same woman.	B1	*Understanding*	**True**	**Retained — CCKT-18**
B2 — Basic knowledge of contraceptive methods (Items B.2.1–B.2.7)					
B.2.1	Male condoms can provide protection against sexually transmitted infections (STIs).	B2	*Recall*	**True**	**Excl. — |Q3| > 0.20 (Phase 4)**
B.2.2	The copper intrauterine device (Cu-IUD) is inserted into the cervix of the uterus.	B2	*Recall*	**False**	**Retained — CCKT-18**
B.2.3	The copper intrauterine device (Cu-IUD) can be used as a method of emergency contraception.	B2	*Application*	**True**	**Retained — CCKT-18**
B.2.4	Emergency contraceptive pills can be taken multiple times within a single month.	B2	*Understanding*	**False**	**Excl. — a < 0.80 (Phase 4)**
B.2.5	Daily oral contraceptive pills can cause permanent infertility.	B2	*Understanding*	**False**	**Retained — CCKT-18**

No.	Item statement (English translation)	Domain	Bloom's level	Answer key	Disposition
B.2.6	Female sterilization (tubal ligation) is a near-permanent contraceptive method, and restoration of fertility following the procedure is very difficult.	B2	*Understanding*	True	Retained — CCKT-18
B.2.7	If one combined oral contraceptive pill (COC) is missed and remembered the following day, two pills should be taken on the day of recollection, then the pack continued as normal.	B2	*Application*	True	Retained — CCKT-18
B3 — Mechanisms of action (Items B.3.1–B.3.6)					
B.3.1	Combined oral contraceptives (COCs) primarily prevent pregnancy by suppressing ovulation.	B3	*Understanding*	True	Retained — CCKT-18
B.3.2	The copper intrauterine device (Cu-IUD) primarily prevents pregnancy by thickening cervical mucus to block sperm from reaching the egg.	B3	*Understanding*	False	Retained — CCKT-18
B.3.3	Emergency contraceptive pills can prevent pregnancy by disrupting or dislodging an already implanted embryo.	B3	*Understanding*	False	Retained — CCKT-18
B.3.4	Condoms prevent sexually transmitted infections (STIs) by forming a physical barrier that prevents contact with bodily fluids.	B3	*Recall*	True	Retained — CCKT-18
B.3.5	Progestin-only injectable contraceptives (DMPA) exert their contraceptive effect primarily through a local action on the uterus.	B3	*Understanding*	False	Retained — CCKT-18
B.3.6	Ovulation suppression is not the primary contraceptive mechanism of progestin-only pills (POPs).	B3	*Understanding*	True	Retained — CCKT-18
B4 — WHO MEC clinical counseling knowledge (Items B.4.1–B.4.8)					
B.4.1	A 20-year-old nulliparous woman is eligible to use an intrauterine device (IUD) for contraception.	B4	*Application*	True	Retained — CCKT-18
B.4.2	A woman who is 5 weeks (35 days) postpartum and currently breastfeeding can safely initiate combined oral contraceptives (COCs) for contraception.	B4	*Application*	False	Retained — CCKT-18
B.4.3	A 30-year-old woman diagnosed with moderate iron-deficiency anaemia should be advised to avoid progestin-only injectable contraceptives (DMPA).	B4	*Application*	False	Retained — CCKT-18
B.4.4	Emergency contraceptive pills can be used in women with obesity (BMI >= 30).	B4	*Application*	True	Retained — CCKT-18
B.4.5	A 23-year-old male patient with a documented history of latex allergy should be advised to use standard latex condoms.	B4	*Application*	**False**	**Excl. — I-CVI < 0.83 (Phase 2)**
B.4.6	A woman with uterine fibroids in whom the uterine cavity is not distorted remains eligible to use a copper intrauterine device (Cu-IUD).	B4	*Application*	True	Retained — CCKT-18

No.	Item statement (English translation)	Domain	Bloom's level	Answer key	Disposition
B.4.7	A 32-year-old woman with uncontrolled hypertension (168/102 mmHg) can safely use combined oral contraceptives (COCs).	B4	*Application*	False	Retained — CCKT-18
B.4.8	A 37-year-old woman who smokes 10 cigarettes per day can safely use combined oral contraceptives (COCs).	B4	*Application*	**False**	**Excl. — |Q3| > 0.20 (Phase 4)**

Note. Item B.4.5 was the sole item excluded during Phase 2 expert review (I-CVI < 0.83, six-specialist panel). Items B.1.1-B.1.5 and B.2.4 were excluded during IRT-based item reduction for low discrimination (a-parameter < 0.80). Items B.2.1 and B.4.8 were excluded due to local dependence with items B.3.4 (\|Q3\| = 0.272) and B.4.7 (\|Q3\| = 0.456), respectively. The item with I-CVI < 0.83 excluded in Phase 2 is reported in Supplementary Table S1 (CVI results).