Supplementary Material S7. Study and sample characteristics, including inclusion/exclusion criteria and consideration of PROGRESS-Plus parameters.

Author (year); Journal	**Research equity consideration** (1) Country; region; city; location of research (2) Study objective (3) PROGRESS-Plus consideration in research design (4) Source of informed consent/language of consent (5) Attrition description	**Inclusion criteria | Justification** (1) Participants' social characteristics (2) Participants' clinical characteristics (3) Participants' behavior (4) Other parameters	**Exclusion criteria | Justification** (1) Participants' social characteristics (2) Participants' clinical characteristics (3) Participants' behavior (4) Other parameters	**PROGRESS-Plus equity reporting** (1) Place of residence of research participants (2) Race/ethnicity/culture/language (3) Occupation (4) Gender/Sex (%M) (5) Religion (6) Education (7) Socioeconomic status (8) Social capital (9) Plus parameters	**Research notes on PROGRESS-Plus**
Armitage (1995); *Sleep.*	(1) USA; Texas, Dallas; University of Texas; Southwestern Medical Center Sleep Study Unit (2) Analyze EEG parameters and interhemispheric variances by sleep stages and sex (3) Research concerns sex diff (4) NR / NR (5) NA	(1) NR (2) No meds except oral/implant | NR (3) a. Pre-study alc & caff restriction | NR b. Keep sleep-wake pattern for 5 d | NR (4) NR	(1) NR (2) NR (3) NR (4) First-degree relatives w psy d/o | NR	(1) NR (2) NR (3) NR (4) 11M, 11F (50%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** mean 25.6±4.2 (M), 24.8±3.9 (F)	(1) Sex plays little role in moderating EEG frequency
Armitage et al. (2000); *Sleep.*	(1) USA; Texas, Dallas; University of Texas; Southwestern Medical Center Sleep Study Unit (2) Compare δ activity in NREM btw depressed and healthy pcps by sex (3) Research concerns sex diff (4) NR / NR (5) NA	(1) NR (2) NR (3) 2 continuous d of sleep w/o disruption | NR (4) No family history of axis 1 d/o | NR	(1) Shift worker | NR (2) Current axis I/sleep d/o | NR (3) Substance abuse w/i 12 months pre-study | NR (4) NR	(1) NR (2) NR (3) NR (4) 15M, 8F† (65%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** range 22-40; mean 27.1±5.9 (M), 30.9±6.2 (F)*	(1) Sex diff in δ activity in healthy adults are likely to decline with ↑ age. (2) Influence of age × δ activity varied as a function of both psychiatric status & sex.
Baker et al. (2012); *J Sleep Res.*	(1) Australia; Victoria, Abbotsford; Compumedics (2) Explore regional and sex diff in sleep and EEG changes in adolescents over 6–8 months (3) Research concerns sex diff and age (4) Given by parents and assented by participant / NR (5) 1 F and 1 M had contaminated data, 1 M had extremely poor sleep	(1) Adolescents 11-14 yrs | Sleep architecture changes during adolescence (2) NR (3) Keep sleep-wake pattern for 5 d | NR (4) NR	(1) NR (2) a. CNS d/o b. Lifetime psy/neuro/sleep d/o | NR c. Loss of consciousness >30 min | NR (3) NR (4) NR	(1) Victoria, Abbotsford ‡ (2) NR (3) NR (4) 18M, 15F (55%)* (5) NR (6) NR (7) NR (8) NR (9) a. **Age:** range 11-14; mean 12.7±0.9 (M), 12.4±0.7 (F)* a. **Tanner stage**: median 2 (M), 3 (F)	(1) Significant sex main effect on δ activity (2) Adolescence is a period of significant change in EEG frequencies
Campbell et al. (2005); *Sleep.*	(1) USA; California, Davis; subject's home (2) Compare adolescent δ decline in EEG data from 9- and 12-year-old M and F (3) Research concerns sex diff and age (4) Given by parent and assented by participant (5) NA	(1) NR (2) NR (3) Keep sleep-wake pattern for 5 d/no naps | NR (4) NR	(1) NR (2) Prev head injury/lifetime psy/neuro d/o | NR (3) NR (4) NR	(1) NR (2) NR (3) NR (4) 35M, 35F (50%)* (5) NR (6) NR (7) NR (8) NR (9) a. **Age:** 1st recording mean 9.31±0.04 (C9), 12.33±0.04 (C12); 2nd recording mean 9.83±0.05 (C9), 12.80±0.04 (C12)* b. **Tanner stage:** 1st recording mean 1.32±0.10 (C9), 2.66±0.22 (C12), 2nd recording mean 1.31±0.11 (C9), 2.89±0.22 (C12)*	(1) Sex diff was seen in slow-wave EEG in C12 F cohort implying adolescent brain maturation may occur faster in F than M (2) Age was a predictor of sleep schedules in both recordings

Campbell et al. (2012); *PNAS.*	(1) USA; California, Davis; subject's home (2) Study the timing of NREM δ EEG power decline and pubertal maturation (3) Research concerns sex diff and age (4) NR / NR (5) Pcps included if they completed at least 3 yrs of study	(1) NR (2) NR (3) Keep sleep-wake pattern for 5 d | NR (4) NR	(1) NR (2) Current psy/neuro d/o | NR (3) Sleep disturbance | NR (4) NR	(1) University town near University of California Davis (2) 79% non-Hispanic white, 7% Asian, 5% Hispanic, 3% African American, 7% mixed race (3) NR (4) C9: 15M, 15F (50%); C12: 18M, 19F (49%)* (5) NR (6) NR (7) NR (8) NR (9) a. **Age:** 9 and 12* b. **Tanner stage:** data reported visually (Fig. 2)*	(1) Clear relationship btw age of rapid pubertal maturation and delta power decline (2) ↑ age was associated with less time asleep, ↓ sleep efficiency (3) Sample demographic may not be representative of society
Carrier J., et al. (2001); *Psychophysiology.*	(1) USA; Pennsylvania; Pittsburgh; Western Psychiatric Institute and Clinic; Sleep and Chronobiology Center (2) Investigating the impact of age and gender on sleep EEG power spectral density in middle-aged pcps (3) Research concerns sex and gender diff, and age (4) Given by participant / NR (5) NA	(1) NR (2) Healthy | NR (3) NR (4) No history of personal/family psy/neuro/sleep/medical d/o | NR	(1) NR (2) a. Any medical condition b. Obese (BMI >27) or considerable wt loss | NR c. AI > 10/PLMAI > 10 | NR (3) a. Sleep meds | NR b. No alc/drugs ≥14 d pre-study | NR (4) First-degree relative with prev psy d/o or seizures | NR	(1) NR (2) NR (3) >95% were students, workers, or homemakers (4) 53M, 47F (53%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** range 20-60*	(1) Gender effects differed across freq bins, but no sign interactions were found btw age and gender, suggesting that the aging process does not differently affect M and F btw 20 and 60 years old (2) Age had a significant role on sleep EEG spectral power density
Carrier J., et al. (2011); *Eur. J. Neurosci.*	(1) Canada; Quebec; Montreal; Unviersité Laval; Centre d'étude du sommeil et des rythmes biologiques (2) Study how age, sex, and topography impact SW characteristics in healthy young and middle-aged pcps (3) Research concerns sex diff and age (4) Given by participant / NR (5) NA	(1) 2 age groups: 20-30 yrs and 41-60 yrs | NR (2) <4 on BDS | NR (3) NR (4) Had PSG screen | NR	(1) Night work | NR (2) a. Sleep altering meds | NR b. Psy/neuro d/o history | NR (3) a. Smoking | NR b. Sleep disturbance+sleep duration of ≤7/≥9h | NR c. Perimenopausal F's using hormonal CCs or HRT | NR (4) Transmeridian travel 3 mos pre-study | NR	(1) NR (2) NR (3) NR (4) Young: 26M, 22F† (54%); Middle-aged: 18M, 21F† (46%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** range 20-30 (Young), 41-60 (Middle-aged); mean 23.3±2.4 (Young), 51.9±4.6 (Middle-aged)*	(1) During adulthood, the characteristics of SWS are sign influenced by age and gender. (2) These findings may be important for understanding diff in sleep patterns for patients with psychopathological conditions
Dijk et al. (1989); *Sleep.*	(1) Netherlands; Groningen province; Groningen; University of Groningen; Department of Biological Psychiatry and Zoological Laboratory (2) Identify sex diff by comparing sleep in young adult and published sleep deprivation EEG data (3) Research concerns sex diff and age (4) NR / NR (5) NA	(1) NR (2) NR (3) No sleep complains | NR (4) NR	(1) NR (2) NR (3) NR (4) NR	(1) NR (2) NR (3) NR (4) 13M, 15F (46%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** range 19-27; mean 23.5 (M), 21.9 (F)	(1) Sex diff weren't just in δ freq but were present in nearly all analyzed freq bins (2) Sex diff in sleep are present in people's 20s
Feinberg et al. (2006); *Am J Physiol Regul Interg Comp Physiol*	(1) USA; California; Davis; Subject's home (2) Investigate the relationship btw δ decline, puberty, growth, sleep patterns, and age (3) Research concerns sex diff and age (4) NR / NR (5) NA	(1) NR (2) No psy/neuro/medical d/o | NR (3) a. No sleep complaint | NR b. Med affecting CNS | NR c. Keep sleep-wake pattern for 5 d/no naps | NR (4) NR	(1) NR (2) NR (3) NR (4) First-degree relative w major psy d/o | NR	(1) Davis community in California (2) 80% Caucasian, 7% Asian, 4% Hispanic. 2% African American 7% mixed race (3) NR (4) C9: 15M, 16F (48%); C12: 19M, 19F (50%)* (5) NR (6) NR (7) NR (8) NR (9) a. **Age:** 9 ± 3 mos (C9), 12 ± 3 mos (C12)* b. **Tanner stages:** mean 1.3±0.1 (C9), 2.5±0.2 (C12)*	(1) There was no diff in the decline rate btw M and F (2) Comparing both age cohorts showed that F begins brain maturation before M (3) The ↓ in δ power density is strongly linked to both age and sexual maturation stage

Fukuda et al. (1999); *Psychiatry Clin. Neurosci.*	(1) Japan; Hokkaido; Sapporo; Subject's homes (2) Investigate sex effects on SW activity in middle aged and elderly pcps by spectral analysis (3) Research concerns sex diff and age (4) NR / NR (5) NA	(1) NR (2) No sig medical history | NR (3) No meds | NR (4) NR	(1) NR (2) NR (3) NR (4) NR	(1) NR (2) NR (3) NR (4) 8M, 8F (50%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** range 54-72; mean 61.5±4.66 (M), 62.38±6.65 (F)	(1) Sign gender diff exist in SWS. The generating mechanism of SWS in middle-aged and elderly F may still be conservative compared to M (2) No significant sex differences in visually scored EEG parameters
Kluge et al. (2010); *PNEC.*	(1) Germany; Bavaria; Munich; Max Planck Institute of Psychiatry (2) Study ghrelin's impact on sleep, the secretion of growth hormone (GH) and cortisol in elderly people (3) Research concerns sex diff and age (4) Given by participant / NR (5) NA	(1) NR (2) Healthy | NR (3) No caff, alc, naps | influence vigilance (4) NR	(1) NR (2) Any sleep disturbance/d/o | NR (3) a. Any meds, HRT | NR b. Sleep duration of ≤6h/≥9h | NR c. Transmeridian flight 3 mos pre-study | NR (4) Depressive symptoms | sleep disturbance	(1) NR (2) NR (3) NR (4) 10M, 10F† (50%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** range 60-70; mean 64±2.2 (M), 63±2.9 (F)	(1) Ghrelin affects sleep in elderly M but not F resembling findings in young subjects (2) F sex hormones has an affect on sleep patterns
Latta, F., et al. (2005); *Sleep.*	(1) USA; Illinois; Chicago; University of Chicago; General Clinical Research Center (2) Examine sex effects on sleep stages and EEG spectral power in older adults (3) Research concerns sex diff and age (4) Given by participant / NR (5) 1 F recording lost due to technical error	(1) NR (2) a. Nonobese pcps | NR b. Normal lab tests | NR c. No prev psy/sleep/neuro/endocrine d/o | NR (3) a. Non-smoking | NR b. No meds/HRT | NR c. <5 on GDS, >25 on FMSE | NR (4) F 1+ y past menopause w no hot flash | NR	(1) Shift workers | NR (2) Diabetes/glucose intolerance | NR (3) 2+ caff drinks per d | NR (4) Transmeridian travel 4 weeks pre-study | NR	(1) Illinois, Chicago ‡ (2) NR (3) NR (4) 10M, 10F† (50%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** mean 59±2 (M), 63±2 (F)	(1) Sex diff in δ activity were more pronounced in REM than in NREM (2) When normalized for REM activity, the sex diff in δ activity in NREM reversed, showing ↓ activity in F (3) Sleep-stage distribution was similar in both sex groups
Ma, J., et al. (2011); *J Clin. Sleep Med.*	(1) USA; Sleep laboratory (2) Study gaboxadol's effect on NREM sleep EEG patterns in transient insomnia using power spectral analysis (3) Research concerns sex diff (4) Given by participant / NR (5) NA	(1) 18-64 y | NR (2) NR (3) NR (4) NR	(1) NR (2) a. Sleep/psy d/o | NR b. >5 on PSQI/>12 on ESS | NR c. Sleep apnea/PLMD | NR d. Sleep duration 6.5-9h, bedtime btw 21:00-24:00 ≥4 times a wk, latency <30 min | NR (3) a. MSLT <10 min | NR b. Excessively sleepy pcps | NR	(1) NR (2) NR (3) NR (4) 118M, 159F (43%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** range 18-64; mean 29±8.3 (M), 32.2±11 (F)	(1) The effect was sex-dependent, with a ↑ effect observed in F than M (2) There were no differences in MSLT, sleep efficiency, (BMI), or age btw the 3 treatment groups, or btw M and F within them
Markovic V., et al (2020); *Sci Rep.*	(1) Switzerland; Bern; subject's homes (2) Examine sex diff in sleep EEG power and coherence across freq bands in NREM and REM in adolescents (3) Research concerns sex diff and age (4) Given by parent and assented by participant / NR	(1) 9-14 y | NR (2) NR (3) NR (4) Born after 30th week of pregnancy | NR	(1) NR (2) NR (3) NR (4) Poor quality EEG data | unable to analyze data	(1) NR (2) NR (3) NR (4) 30M, 31F (49%)* (5) NR (6) NR (7) NRCS (8) NR (9) a. **Age**: range 9-14; mean 12.83±0.75 (M), 12.12±1.67 (F) b. **Tanner stage**: mean 2±1 (M), 3±1 (F)	(1) M showed a ↓ and F showed an ↑ of SPDL freq with age (2) Observed a significant interaction btw age and gende for all frequencies, with an exception of θ and α, both sleep states with M experiencing ↑ in coherence at older age as compared to F
Mongrain, V., et al. (2005); *Sleep.*	(1) Canada; Quebec; Montreal; Sacré-Cœur Hospital of Montréal; Chronobiology laboratory (2) Explore relationship of chronotype on sleep stages and quantitative sleep EEG btw sexes (3) Research concerns sex diff (4) Given by participant / NR (5) NA	(1) No shift work | NR (2) Healthy | NR (3) a. Nonsmoker | NR b. >85% sleep efficiency, latency <30 min, AI+PLMI <5 per h, MSLT >7 min | NR c. No drugs | NR (4) Transmeridian travel 3 mos pre-study | NR	(1) NR (2) NR (3) a. Bedtime btw 7-9h | NR b. 3+ alc drink/2+ caff drink per day | NR (1) NR	(1) NR (2) French questionnaire used (3) 18 pcps were students without a summer job, 2 were between jobs, 1 person only worked in the afternoon, and 3 worked at home with their own schedule (4) 12M, 12F† (50%)* (5) NR (6) NR (7) NR	(1) Morningness-eveningness seems to affect sleep in a sex-specific manner, with M being > affected by their chronotypes (2) Prominent sex diff found in high σ range

				(8) One subject in each cohort had young children at home (9) **Age**: range 19-34; mean 24.7±1.5 (Morning type), 23.4±0.7 (Evening type)	
Ricci et al. (2021); *eNeuro.*	(1) Canada; Manitoba; Winnipeg; University of Manitoba; Sleep disorder center (2) Investigate age, sex, pubertal diff in sleep SPDLs and related σ activity during this developmental period (3) Research concerns sex diff and age (4) Given by participant or by parent for underage subjects / NR (5) NA	(1) NR (2) NR (3) NR (4) NR	(1) NR (2) Lifetime history of psy/behavioral d/o | NR (3) NR (4) NR	(1) NR (2) CS: 74.1% Non-hispanic White, 25.9% Racial/ethnic minority; L: 75.9% Non-hispanic White, 24.1% Racial/ethnic minority (3) NR (4) CS: 300M, 272F (52%); L: 178M, 154F (54%)* (5) NR (6) NR (7) NR (8) NR (9) a. **Age:** range 5-22* b. **Tanner stage:** stages 1-3 (n =56), stages 4-5 (n = 256)*	(1) M experience greater maturational changes in SPDL density in transition to adolescence, driven by later pubertal development, sex diff become prominent in early adulthood when F have greater SPDL power, freq, fast SPDL percent
Ringli et al. (2013); *Int J Psychophysiol.*	(1) Switzerland; Zurich; University Children's Hospital; Child Development Center (2) Examine whether sexually dimorphic features are reflected in topography of sleep SWA (3) Research concerns sex diff (4) Given by participant or parents for underage subjects / NR (5) NA	(1) Right-handed | NR (2) No psychopathology, chronic medical diseases, sleep complaints/primary sleep d/o | NR (3) Non-smoker | NR (4) NR	(1) NR (2) NR (3) a. Current psychoactive agent/meds | NR b. >4 cups of coffee/same amount of caff per d, ≤1 glass of alc | NR (4) NR	(1) NR (2) NR (3) NR (4) 11M, 11F (50%)* (5) NR (6) NR (7) NR (8) NR (9) a. **Age:** range 8.7-19.4 (M), 9.1-19 (F); mean 13.4±3.9 (M), 13.4±3.9 (F)* b. **Tanner stage:** mean 6.3±3.6 (M), 7.6±3.9 (F)	(1) Age unrelated (2) Cortical areas governing functions in which one sex outperforms other exhibit ↑ sleep SWA and may indicate maturation of sex-specific brain function and higher cortical plasticity during development
Ujma et al. (2019); *Neurobiol Aging.*	(1) Hungary/Germany; Central Hungary/Bavaria; Budapest/Munich; Max Planck Institute of Psychiatry/Institute of Behavioral Sciences of Semmelweis University (2) Investigate age and sex effects on sleep EEG functional connectivity in adults (3) Research concerns sex diff and age (4) Given by participant / NR	(1) NR (2) a. No drugs except CC | NR b. No neuro/psy d/o | NR (3) 2 cups of caff before noon | NR (4) NR	(1) NR (2) NR (3) NR (4) Poor EEG data | unable to obtain data needed for analysis	(1) NR (2) NR (3) NR (4) 94M, 78F (55%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** range 17-69; mean a29.74±10.71*	(1) General intelligence was not significantly associated with connectivity in either sex (2) NREM EEG connectivity in σ freq range increases ↓ with aging (3) Connectivity was substantially greater in F than in M in high σ freq range
Yoon et al. (2021); *J Sleep Res.*	(1) Korea; Gyeonggi; Ansan; Subject's homes (2) Identify role of age and sex in sleep structure with EEG spectral power analyses of middle-aged/older adults (3) Research concerns sex diff and age (4) NR / NR	(1) NR (2) NR (3) NR (4) Underwent PSG protocol in the 6th biennial exam btw 2011-2012 | NR	(1) NR (2) Major neuro/psych d/o | NR (3) Substance abuse | NR (4) Poor quality EEG | unable to perform spectral analysis	(1) Gyeonggi, Ansan (2) Korean (3) NR (4) 330M, 314F (51%)* (5) NR (6) NR (7) NR (8) NR (9) **Age:** range 40-69; mean 57.7±6.5 (M), 57.9±6.9 (F)*	(1) Increasing age is negatively associated with sleep quality and quantity – diff are more pronounced in M than F (2) Age does not affect sleep in a uniform matter (3) Discussion on N3 being proportionally less in Koreans than Caucasians

*Parameters considered in analysis; † Study uses the terms men and women (gender) but is referring to sex; ‡ Study indicated the recruitment took place in the local population.

Abbreviations: **AI**, Apnea-hypopnea Index; **alc**, alcohol; **ANOVA**, analysis of variance; **BDS**, Beck Depression Scale; **btw**, between; **BMI**, Body Mass Index; **C,** Cohort; **caff**, caffeine; **CC**, contraceptive; **CNS**, Central Nervous System; **CS**, Cross-sectional; **d**, days; **diff**, differences; **d/o**, disorder; **EEG**, electroencephalogram; **ESS**, Epworth Sleepiness Scale **F**, female; **freq**, frequency; **FMSE**, Folstein Mini-Mental Status Examination; **FS**, fast spindle; **GDS**, Geriatric Depression Scale Short Form; **HRT**, Hormone Replacement Therapy; **IQ**, Intelligence Quotient; **L**, longitudinal; **M**, male; **Meds**, medicine; **Min**, minutes; **Mos**, months; **MSLT**, Multiple Sleep Latency Test; **neuro**, neurological; **NR**, not reported; **NREM**, non-REM; **pcp**, Participants; **phys**, Physical; **PLMI**, Periodic Limb Movements Index; **PLMAI**, Periodic Limb Movements Arousal Index; **PLMD**, Periodic Limb Movement Disorder; **PSG**, Polysomnographic recording; **PSQI**, Pittsburgh Sleep Questionnaire Inventory; **psy**, psychiatric; **REM**, rapid eye movement; **sig**, significant; **SPLD**, spindle; **SWA**, Slow Wave Activity; **w**, with; **wk**, week; **wt**, weight; **w/o**, without; **w/i**, within; **yrs**, years. Symbols: ↓, decreased; ↑, increased, δ, delta; σ, sigma