



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

GIRLS - Evolution of puberty and reproductive life history of women: age-at-menarche and age-at-first childbirth from farming subsistence to urban societies in Italy

Age-at-menarche (first menstruation) and age-at-first-childbirth are key life history milestones for women. The age at which menarche and first childbirth occur varies from one woman to the next. Age-based differences are a measure of health and success in adapting to environmental constraints; while the gap between menarche and the age at which a woman has her first child provides insights into perceptions of female adolescence and, overall, the way societies are structured. Despite numerous studies on secular trends in menarche and women's reproductive behaviours across diverse modern-day societies, how menarche onset and reproductive trajectories differ in women during the recent human evolution is still an unexplored issue. Between the 6th and the 1st millennium BCE, the adoption of an agriculture-based economy and the rise of the first urban centres towards more complex and cosmopolitan societies produced changes in human biology as an adaptative response to new external factors and lifestyles. GIRLS will reconstruct the evolution of age-at-menarche and female reproductive behaviours during these critical transformations, from the Neolithic to proto-urban and urban societies until the Early Roman Imperial Age in Italy. In the first multi-proxy study of wisdom teeth, I will combine histology with trace elements micro-chemistry (LA-ICPMS) to identify novel dental biomarkers for detecting and timing age-at-menarche and first-childbirth in ancient women across six millennia of Mediterranean history. GIRLS will impact several fields such as life history, histology, biochemistry, archaeology, bioarchaeology, and anthropology. From an archaeological perspective, I will open an unexplored chapter into the bio-cultural timing of adolescence bringing unprecedented insight into the behaviours and lives of women in Ancient Italy. GIRLS will provide pivotal information about the key passage to womanhood and how different societies and human cultures coped with it across time.