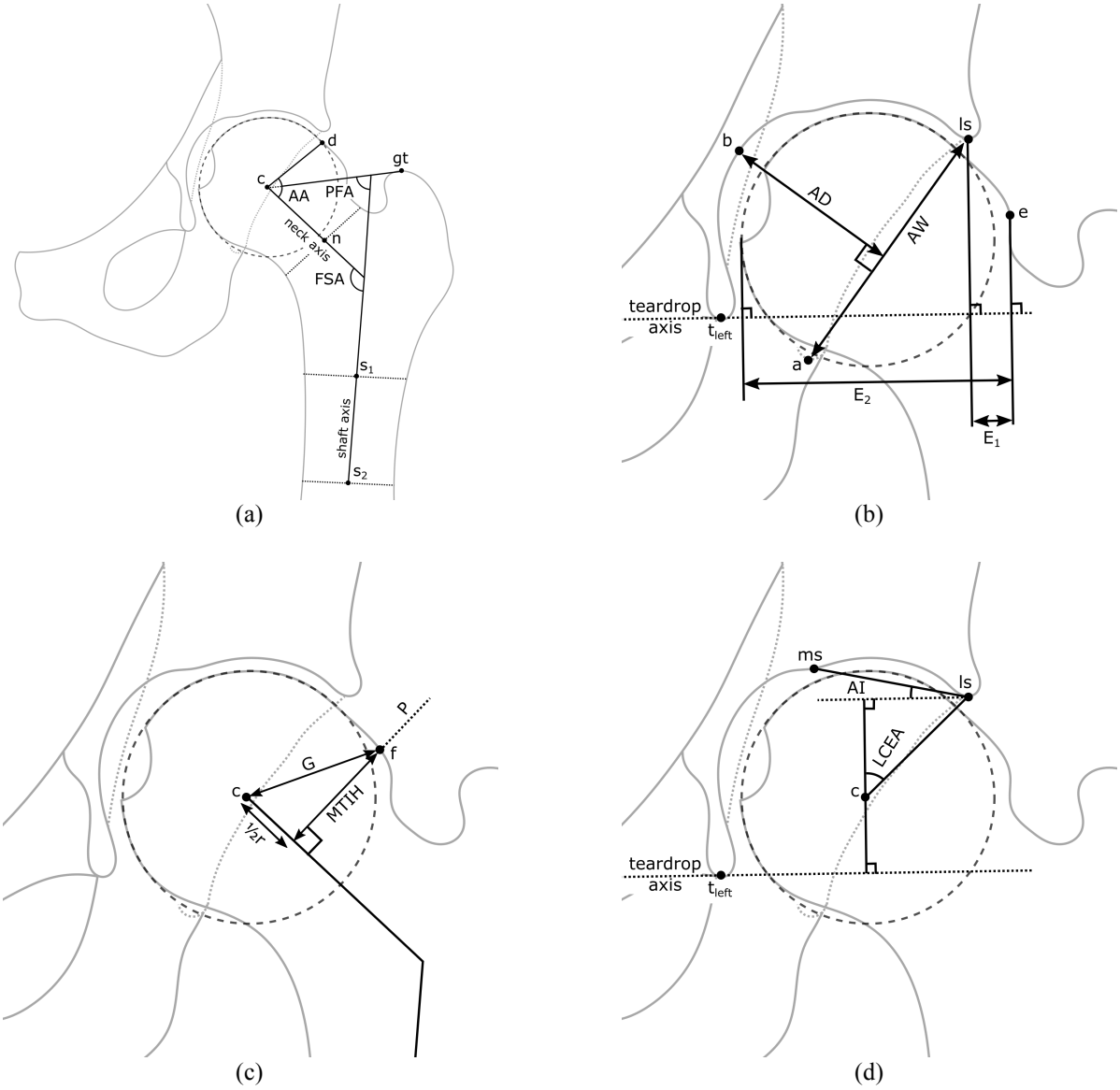

Supplemental Figure : Summary of important morphological measurements in OxMorf.

(a) **Femoral shaft angle (FSA):** the angle between the neck axis and the shaft axis. The neck axis is defined by points *c* (centre of a circle fit to the femoral head) and *n* (midpoint along the line of minimum neck width). The shaft axis is defined by points p_1 and p_2 (respective midpoints along lines through the proximal and distal shaft). **Proximal femoral angle (PFA):** the angle between the shaft axis and the line from points *c* to *gt* (greater trochanter). **Alpha angle (AA):** the angle between the neck axis and the line from *c* to *d* (point of lateral deviation of the head from the circle).

(b) **Acetabular width (AW):** the length of the line from *ls* (lateral sourcil) to *a* (inferior medial rim of the acetabulum)**.** **Acetabular depth (AD):** the distance from *b* (deepest point of acetabulum) to the closest point on the line from *ls* to *a*. **Extrusion index:** the ratio E_1/E_2. E_1 is the distance along the teardrop axis from *ls* to *e* (lateral edge of the femoral head). E_2 is the distance along the teardrop axis from the medial edge of the head circle to *e*. The teardrop axis is defined by the teardrop points t_{left} and t_{right} (not shown).

(c) **Modified triangular index height (MTIH):** the distance from *f* (the point that the line *P* crosses the edge of the head) to the closest point on the neck axis; the line *P* is perpendicular to the neck axis, and crosses the axis at a distance of half the head circle radius *r,* from *c*. **Triangular index:** a binary measure, equal to 1 if *G* (the distance from *c* to *f)* is greater than *r* + 2mm. **Gosvig ratio.** The ratio G/r.

(d) **Lateral Centre Edge Angle (LCEA):** the angle between the line from *c* to *ls*, and a line perpendicular to the teardrop axis. **Acetabular index (AI):** the angle between the line from *ls* to *ms* (medial sourcil) and the teardrop axis.