

Appendix: Formulae used to calculate derived bone histomorphometric indices from primary measurements

Abbreviation	Parameter	Unit	Formula
Structural			
BV/TV	Bone volume/tissue volume	%	Bone area/tissue area * 100
BS/TV	Bone surface/tissue volume	mm ² /mm ³	Bone perimeter/tissue area * 1.2
Static Formation			
OV/BV	Osteoid volume/bone volume	%	Osteoid area/bone area *100
OS/BS	Osteoid surface/bone surface	%	Osteoid perimeter/bone perimeter * 100
O.Th	Osteoid thickness	μm	(Osteoid area/osteoid perimeter) * 2/1.2
Fb/TV	Fibrosis volume/tissue volume	%	Fibrosis area/tissue area *100
Dynamic Formation			
MS/BS	Mineralizing surface/bone surface	%	(Double label perimeter + 1/2 single label perimeter)/bone perimeter *100
MS/OS	Mineralizing surface/osteoid surface	%	(Double label perimeter + 1/2 single label perimeter)/osteoid perimeter *100
MAR	Mineral apposition rate	μm/d	(Distance between labels/inter-label period)/1.2
Aj.Ar	Adjusted apposition rate	μm/d	[(MAR * MS/BS)/OS/BS] * 0.01
MLT	Mineralization lag time	d	O.Th/AjAr
OMT	Osteoid maturation time	d	O.Th/MAR
BFR/BS	Bone formation rate/bone surface	μm ³ /μm ² /d	MAR * MS/BS * 3.65