Type	Conventional		New	ACL Screw
Design	A: Solid	B: Porous	C: Barbed	
Variables (number of variations)	Shape (2) Interference (6)	Shape (2) Modulus (2) Interference (6)	Inner length (5) Outer length (6) Angle (5) Strut thickness (5) Strut density (9)	Interference (2)
Combinations	All possible (2x6)	All possible (2x2x6)	Varied around baseline	All possible (2)

Synthetic bone tests for design optimisation (4 repeats for each combination)

Design	A: Solid	B: Porous	C: Barbed
Optimisation	The max pull-out variant	Max pull-out variants for both moduli	New peg (the max pull-out for each variable)
Remaining combinations	1	2	1

Synthetic bone tests to compare optimums (4 repeats for each combination)

Best performing (max pull-out)	Conventional (The best of design A vs B)	Barbed (The optimised peg)
Remaining combinations	1	1

Cadaveric bone tests (8 repeats for both)

Figure S1: An overview of the tests performed