

**Supplementary table S1**

zygote diameter - $d$ [ $\mu m$ ]	70 - 130
cell elasticity - $k$ [ $nN/\mu m$ ]	5 - 20
cell adhesion - $\alpha$ [ $\mu N$ ]	0 - 10
active forces - $F_{act}$ [ $\mu N$ ]	1 - 8
blastocoelic forces - $F_{press}$ [ $\mu N$ ]	1 - 5
random force frequency - $f$ [1/cell cycle]	10 - 200
effective viscosity - $\mu$ [ $\mu N \cdot s/\mu m$ ]	0.1 - 0.2

Table S1: The ranges of the mechanical parameters used in the simulations.