KIDScore™ D5 decision support tool

KIDScore D5 is a model based on morphology and morphokinetic traits associated with the implantation potential of embryos transferred on day 5. The model is designed to help clinics differentiate between embryos with higher or lower chance of implantation. This reduces the number of embryos that clinic personnel needs to consider for transfer and freezing and thereby is a tool to improve evaluation efficacy.

KIDScore D5 is robust, safe and easy to use and will provide the immediate benefit of using time-lapse for embryo evaluation. The model has been validated on data from day 5 transfers from a wide range of clinics.

Morphokinetics defined

When embryos are monitored during cultivation by using time-lapse technology, their dynamic development is revealed.

Embryo morphokinetics describe the events which take place as the embryo develops. Each event is registered as a variable with an associated value. As an example, "t2" denotes the exact time when the embryo divided into two cells.

Several studies have shown morphokinetic variables to be correlated to embryo implantation potential. However, due to variations in culture conditions, clinic protocols, patient factors etc., the pattern of morphokinetics often vary between clinics.
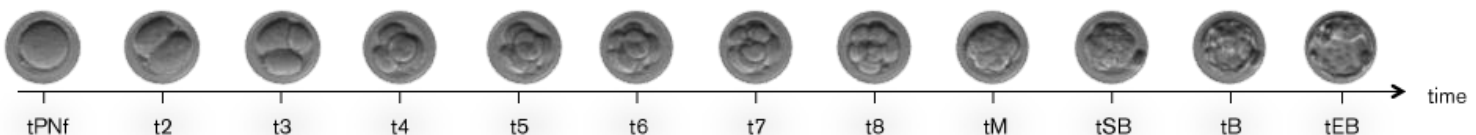

Principles of KIDScore D5

KIDScore D5 is based on developmental information from approximately 5200 embryos with known implantation status after a day 5 transfer.

This large dataset makes it possible to distinguish broad statistical patterns that are generally applicable for evaluating embryos before transfer.

KIDScore D5 is designed as a ranking model assigning a scores from a continuous scale running from 1 to 9.9 to embryos according to their chance of implantation after day 5 transfer.

Embryos with lower scores have a statistically lower chance of implanting and embryos with higher scores have a statistically higher chance of implanting.

KIDScore D5 is based on development patterns that are found to generally reveal implantation competence. Other criteria may be indicative of implantation as well.
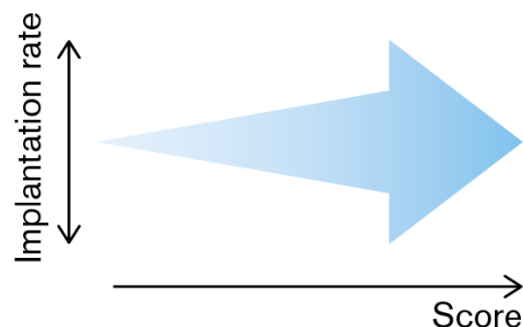

Note that KIDScore D5 can only be used for non-disrupted cultures with reduced oxygen conditions (4-6% O_2)

TECHNOTE

Practical usage

The use of KIDScore D5 is based on annotations performed on the *Annotate* page of the EmbryoViewer® software.

For the model to work as intended it is necessary to annotate a fixed set of variables. These variables must be annotated consistently:
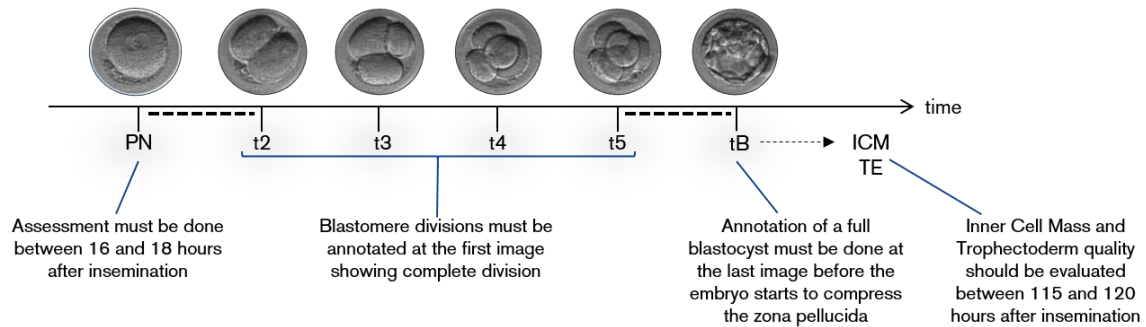
Variables in the sequence above indicate information needed for correct application of KIDScore D5. Other information can be added without affecting the model score.

Applying KIDScore D5

Select an annotated slide and go to the Compare & Select page of the EmbryoViewer software.
From the Model drop-down menu at the top of the page, select "KIDScoreD5 v3".

Each embryo will be assigned a score from a continuous scale running from 1 to 9.9 with one decimal differences.

Other criteria, not included in the model, may be indicative of implantation as well and should be part of the final evaluation of embryos before transfer. It is up to the embryologist to make the decision on which embryo(s) to transfer in each cycle.

Three factors in combination yield the score. The score is assigned to 2PN embryos only.

Cleavage regularity   Developmental speed   Blastocyst quality

Scores will be assigned only after 95 hours post insemination.

A low quality trophectoderm and a tB of 144 hours after insemination is assumed if not annotated differently.

KIDScore D5 assignes scores from a continous scale ranging from 1 to 9.9

Embryos that are not correctly fertilized (non-2PN embryos) are given the score 0

An "N/A" indicates that one or more of the mandatory annotation variables has not been annotated.

Note that embryos designated with the same score by KIDScore are not necessarily equivalent.
Similarly, scores which differ only by a few decimal points may not indicate different implantation potentials.