

生物

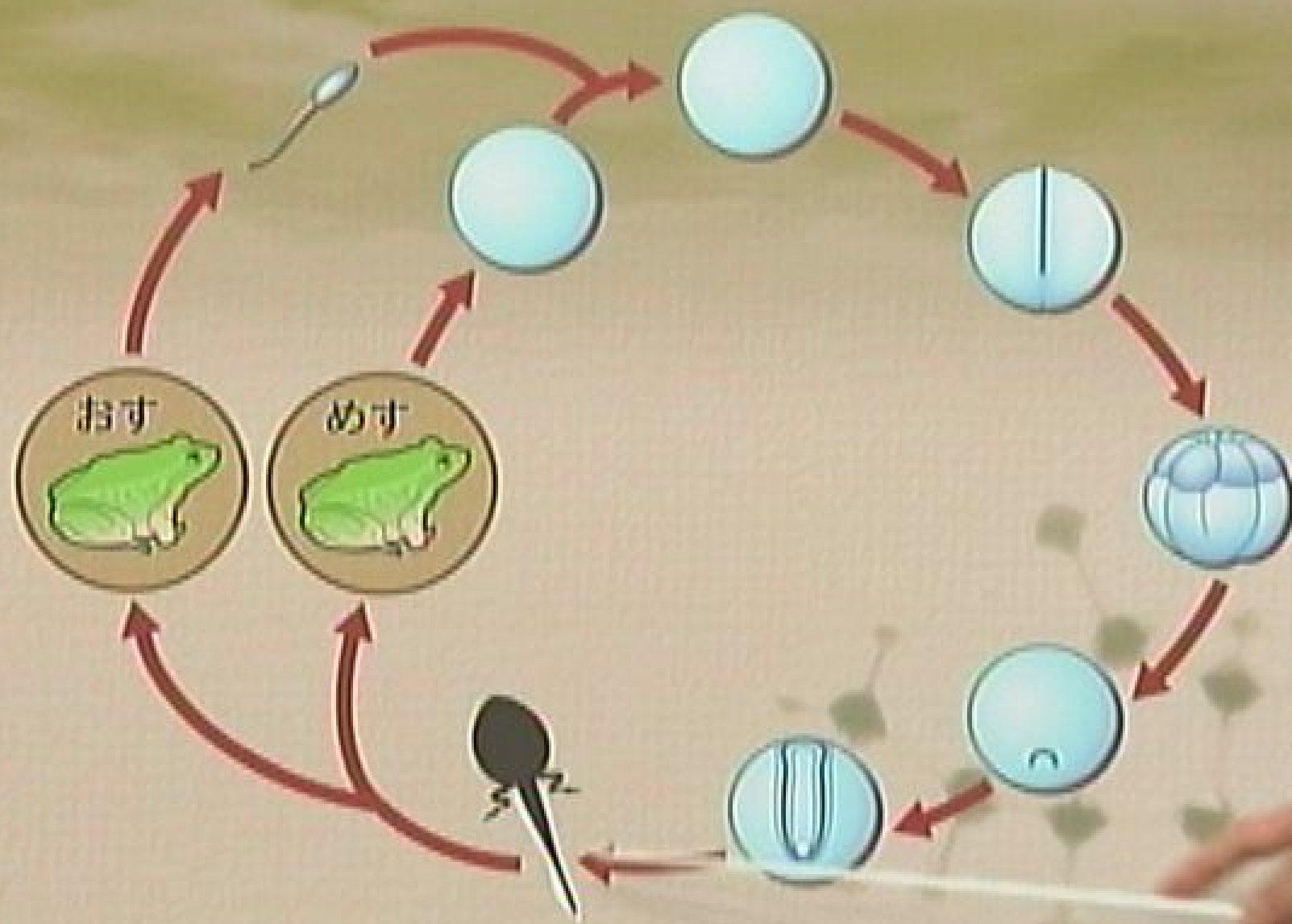


生殖細胞の作り方



東京都立忠生高等学校教諭
山藤旅聞

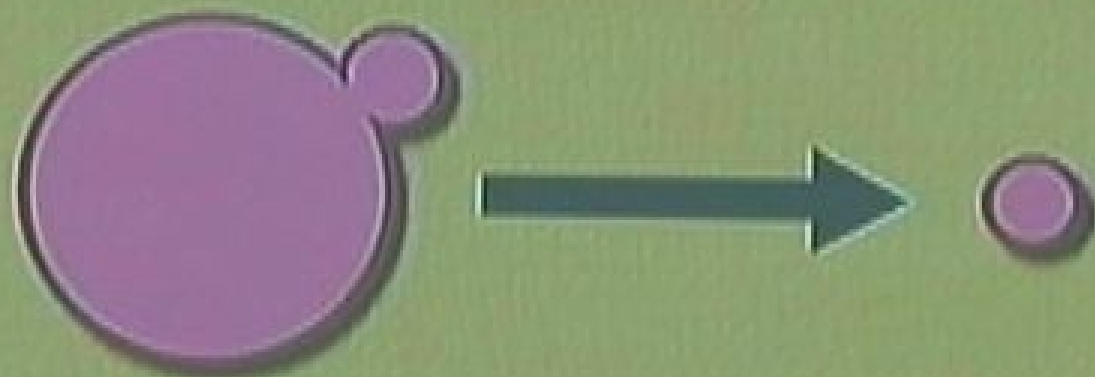




今日の学習

- ① 生殖細胞(動物)の特徴
- ② 生殖細胞(動物)を作る
うまい仕組み

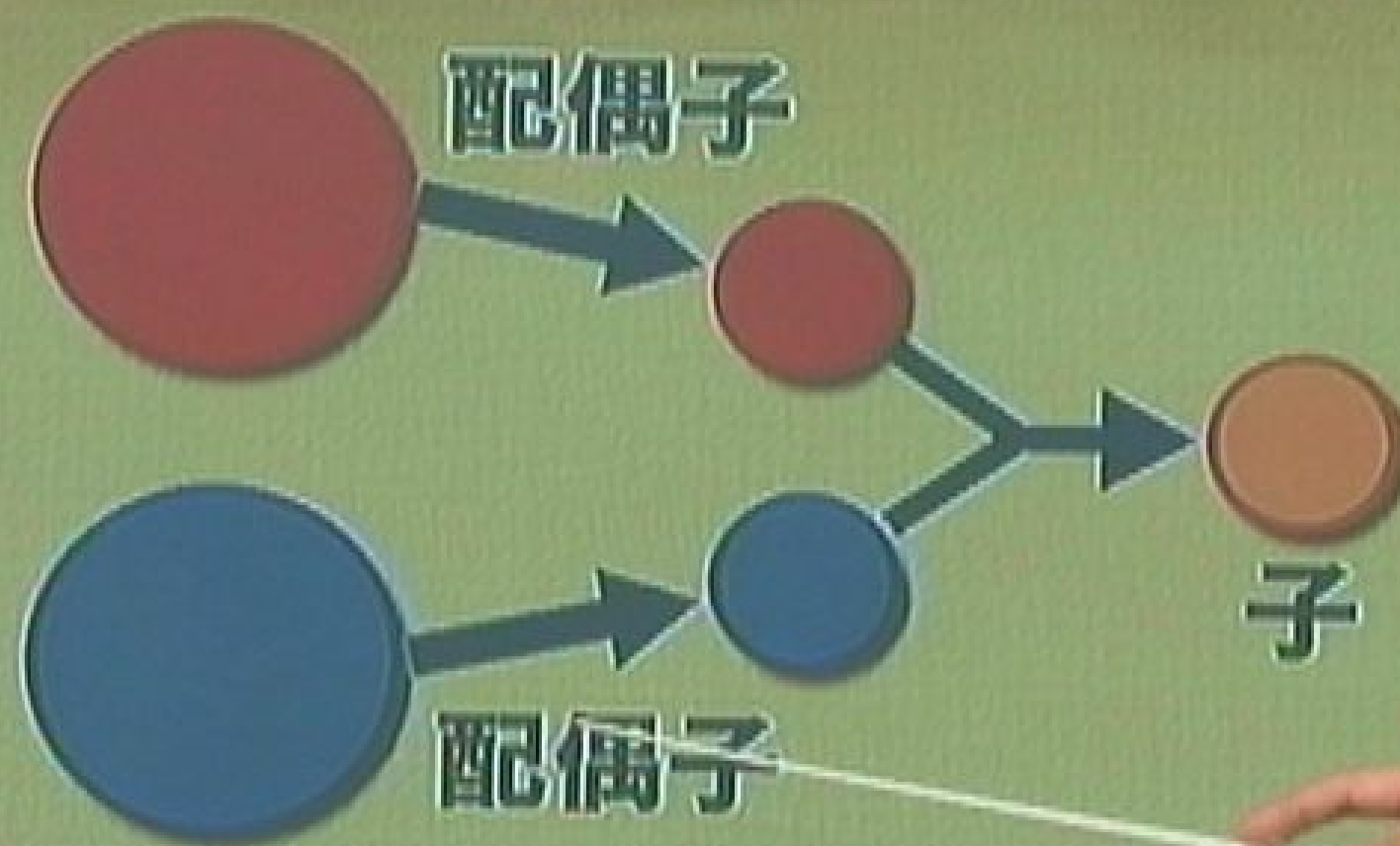
無性生殖

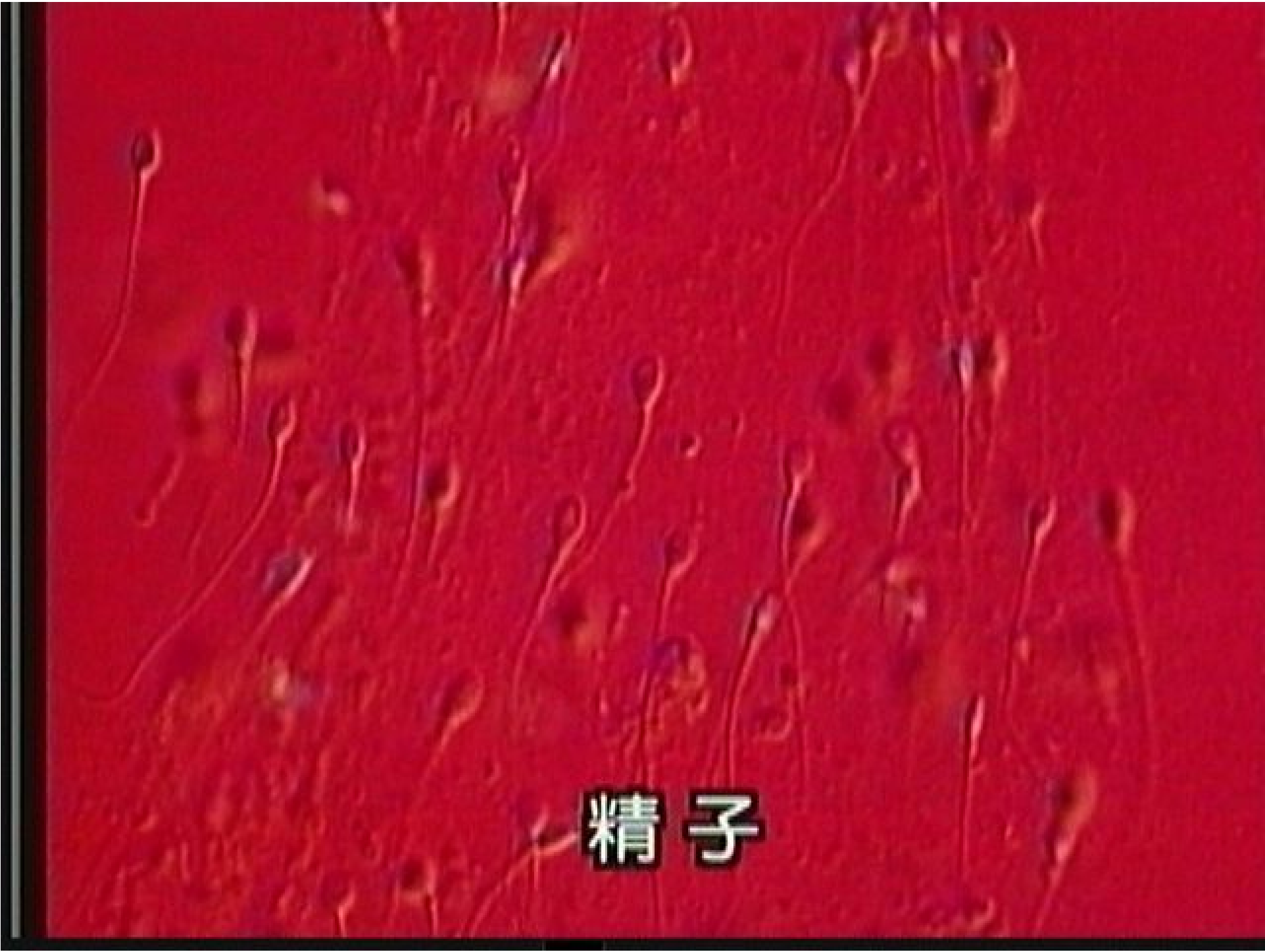


体の一部から

子

有性生殖



A microscopic view of numerous sperm cells against a reddish background. Each sperm cell consists of a small, oval-shaped head and a long, thin, wavy tail. The cells are scattered across the field of view, with some appearing more clearly than others. The overall image has a slightly grainy texture, typical of a microscopic photograph.

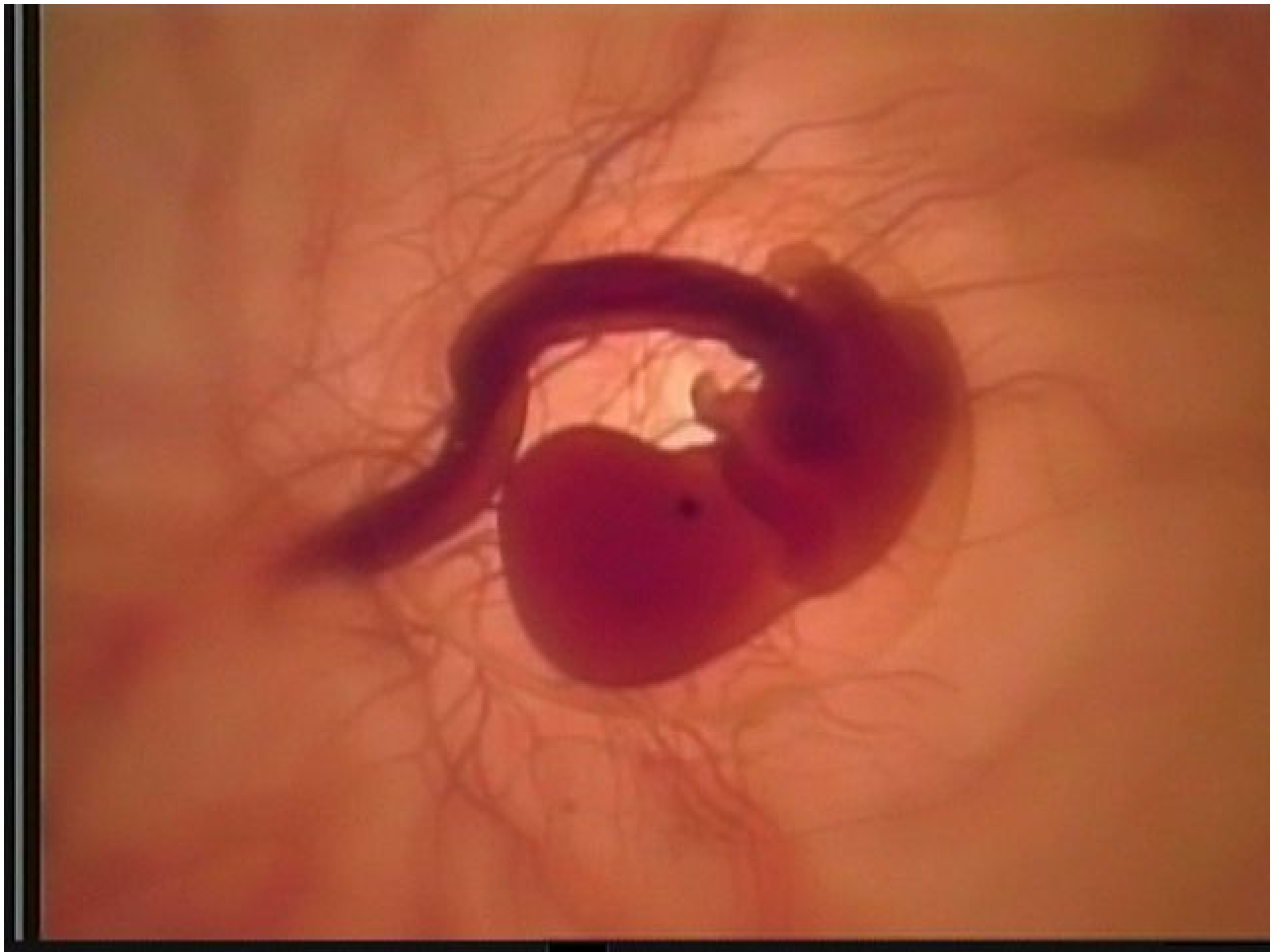
精子



卵

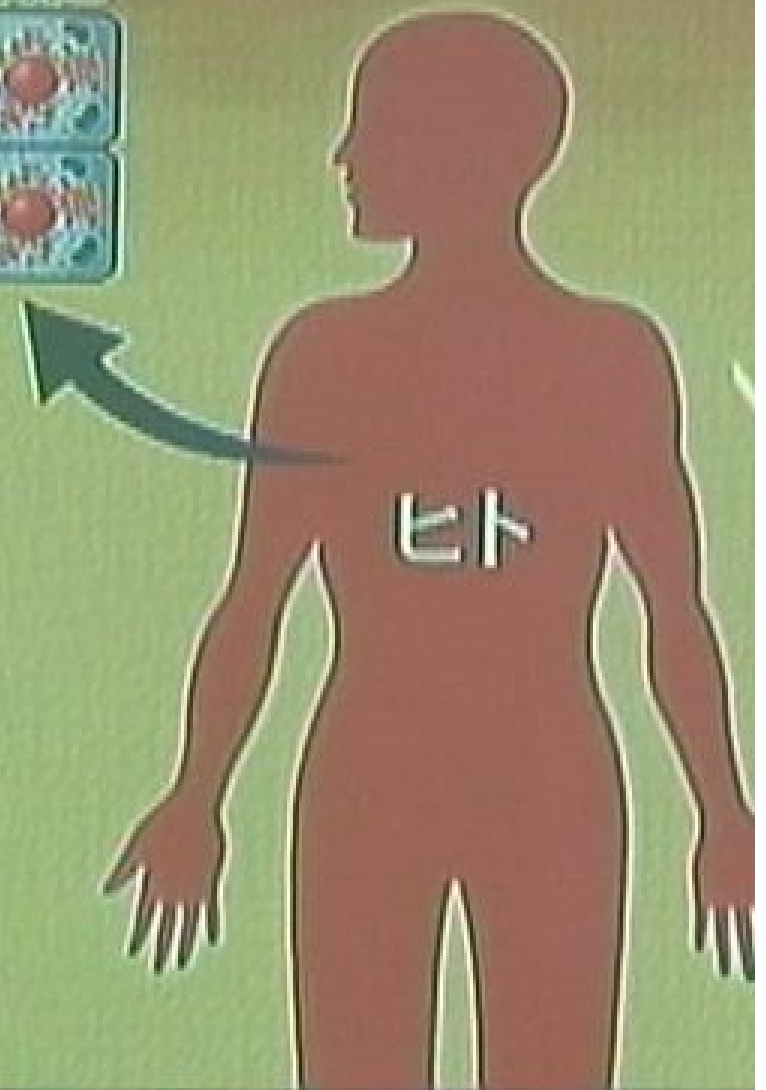


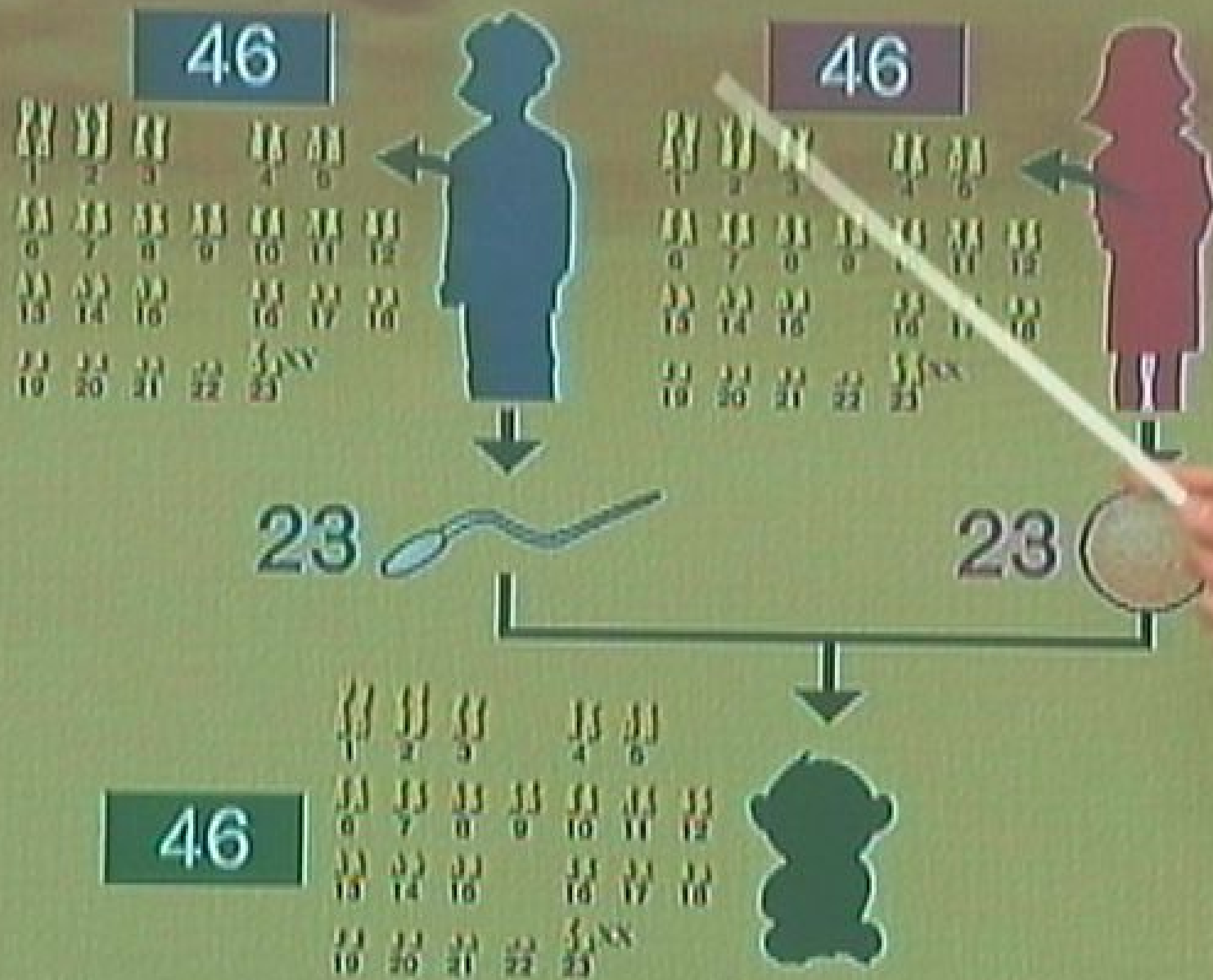
受精



ヒトゲノム

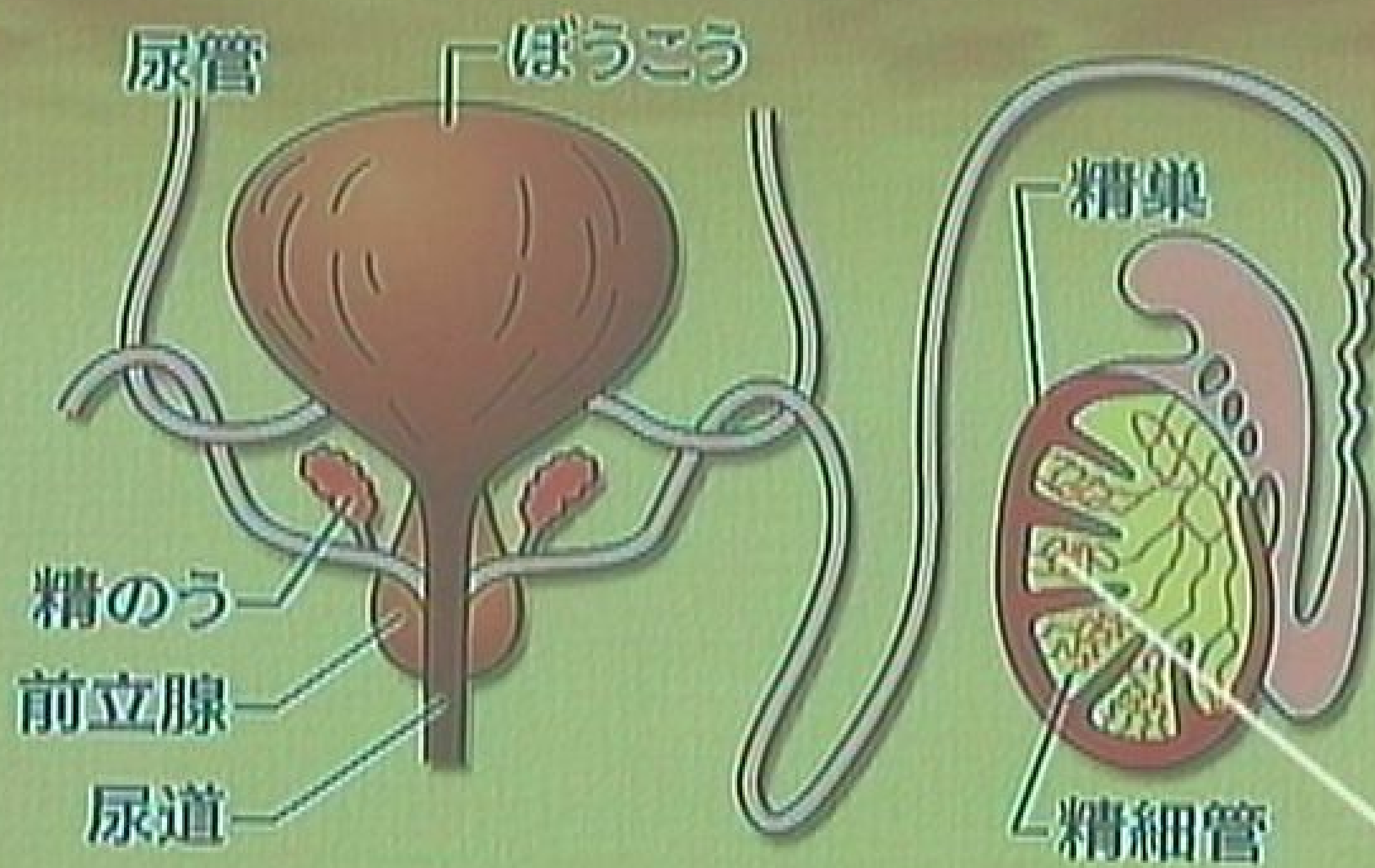
核 細胞





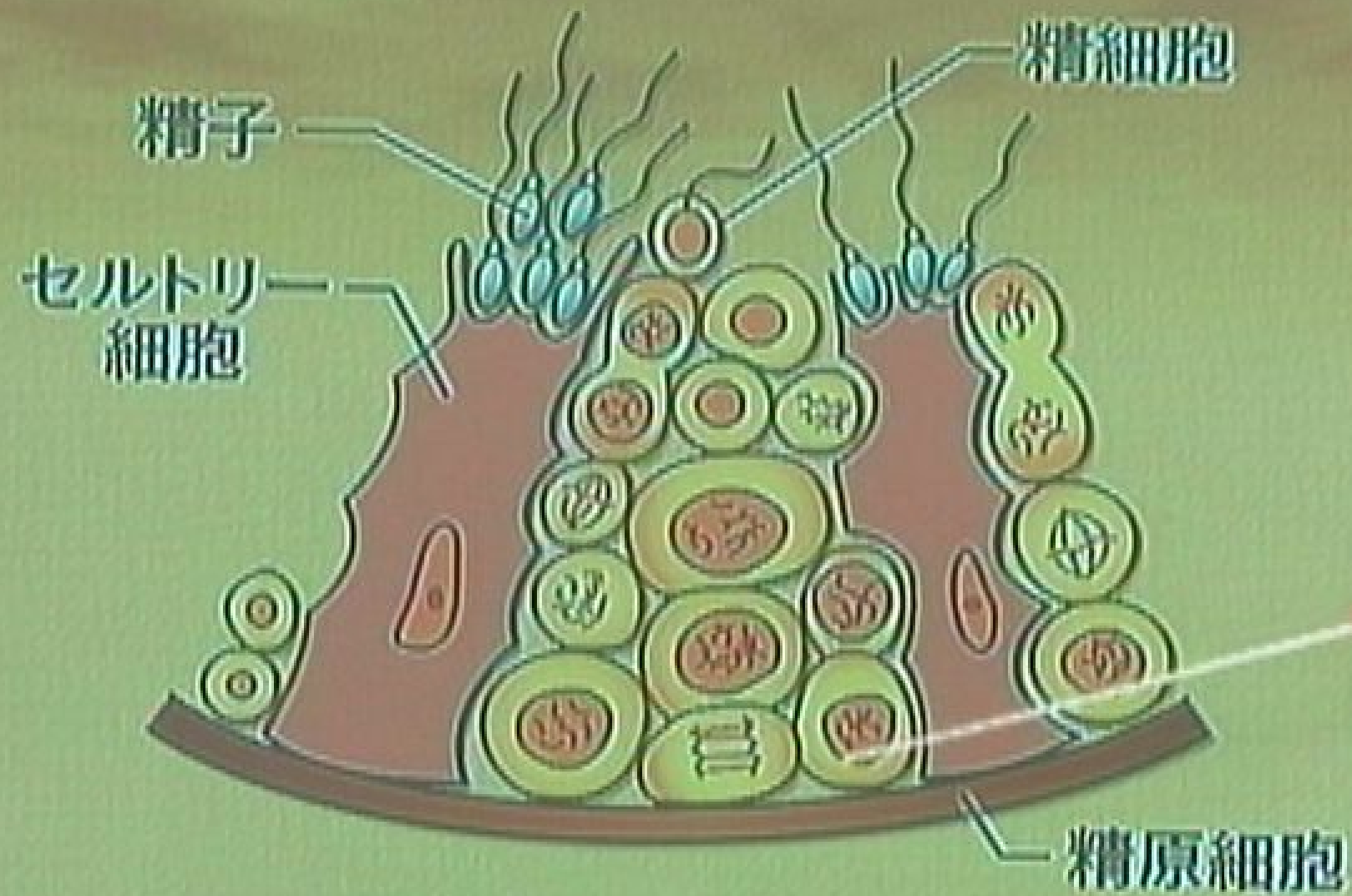
精子の作り方

精巣(ヒト)

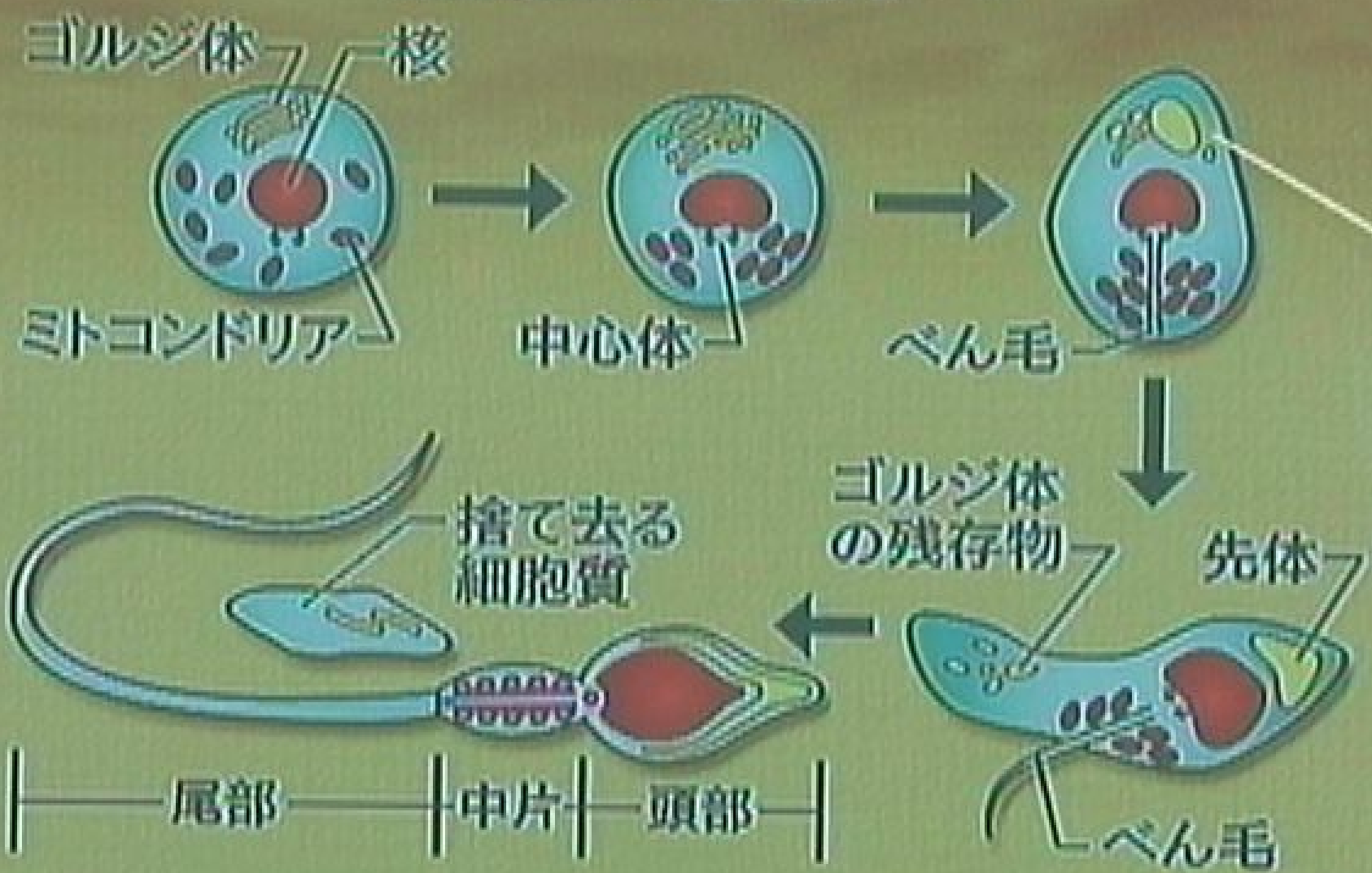




減数分裂

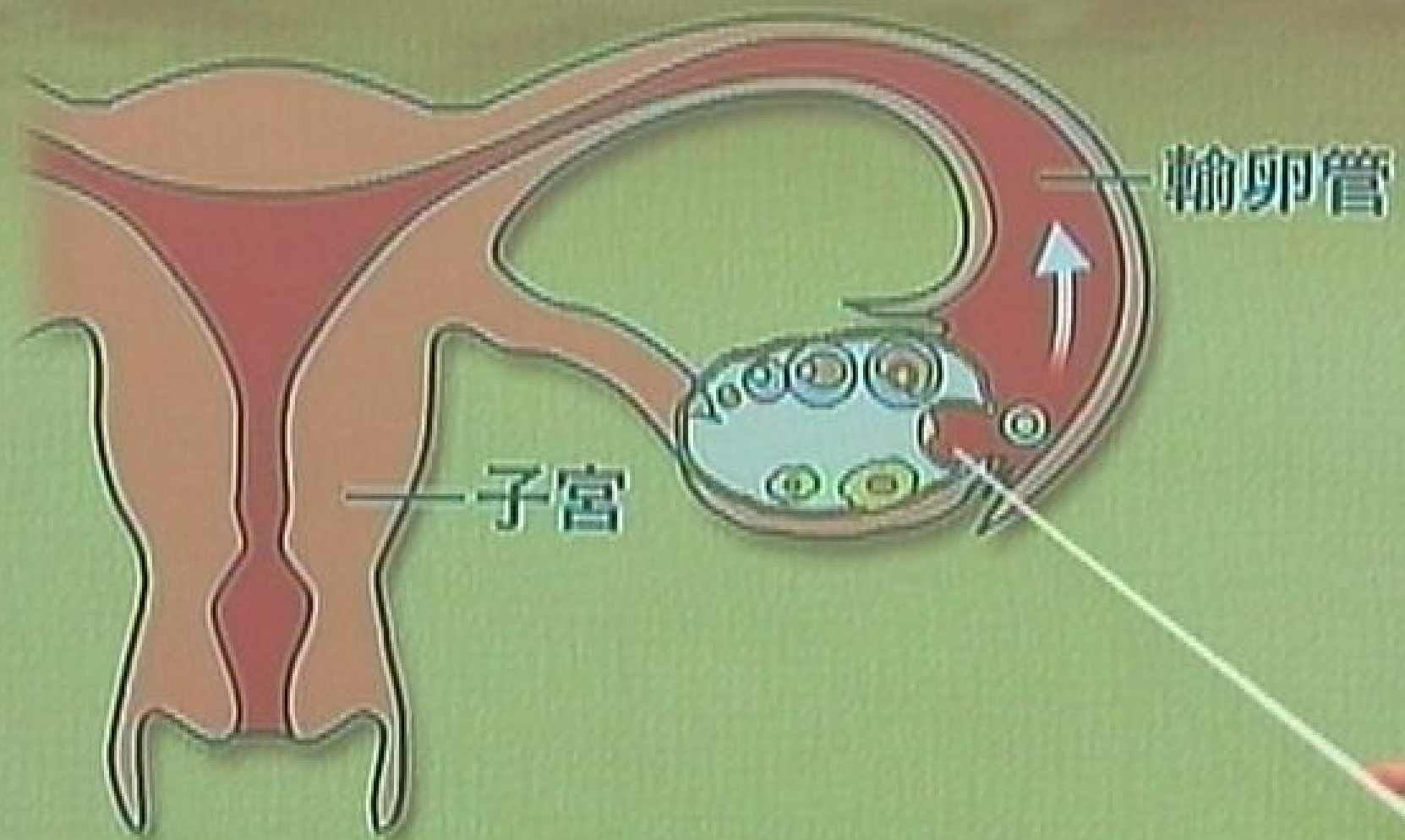


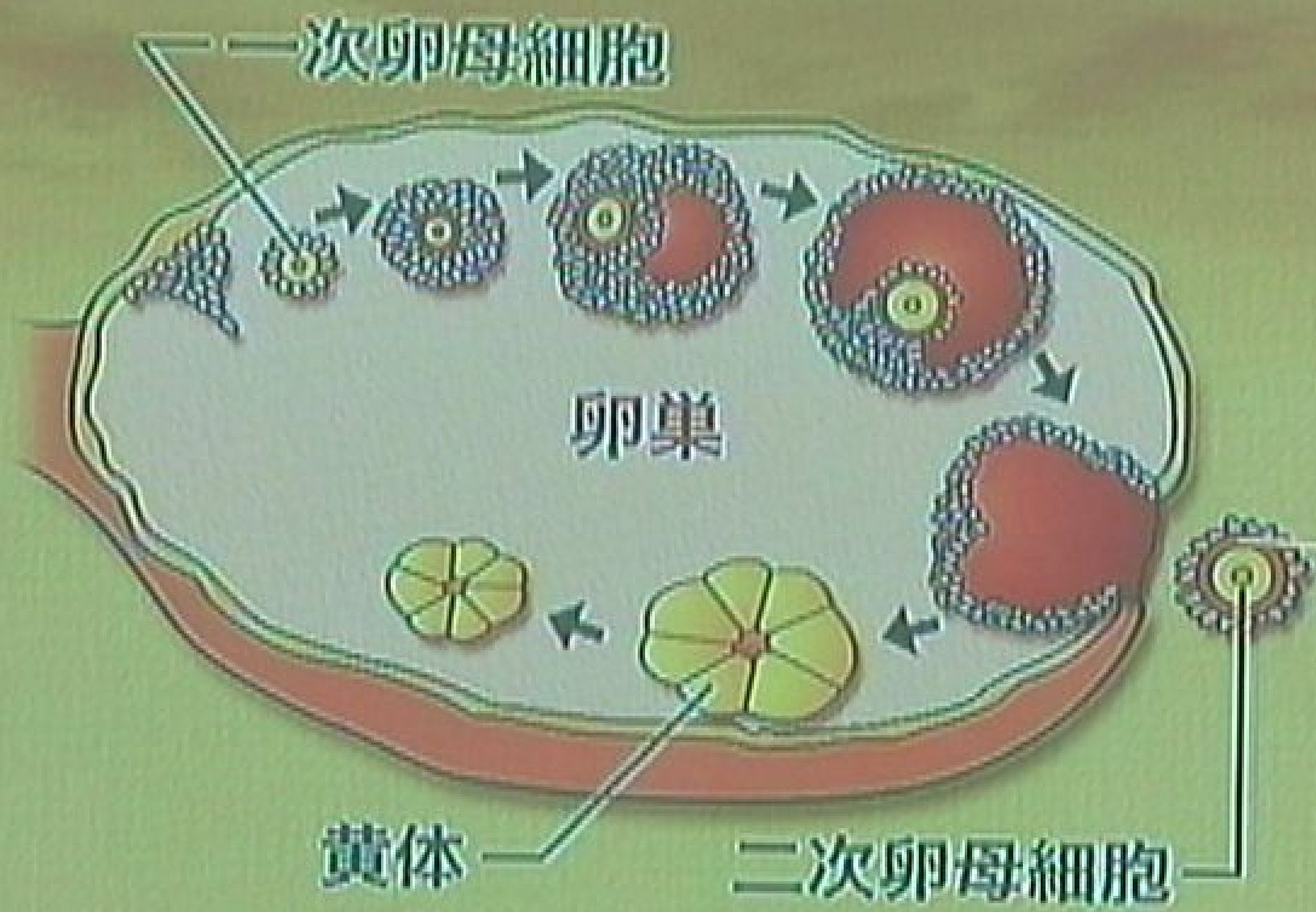
精細胞から精子へ



卵のでき方

卵巣(ヒト)







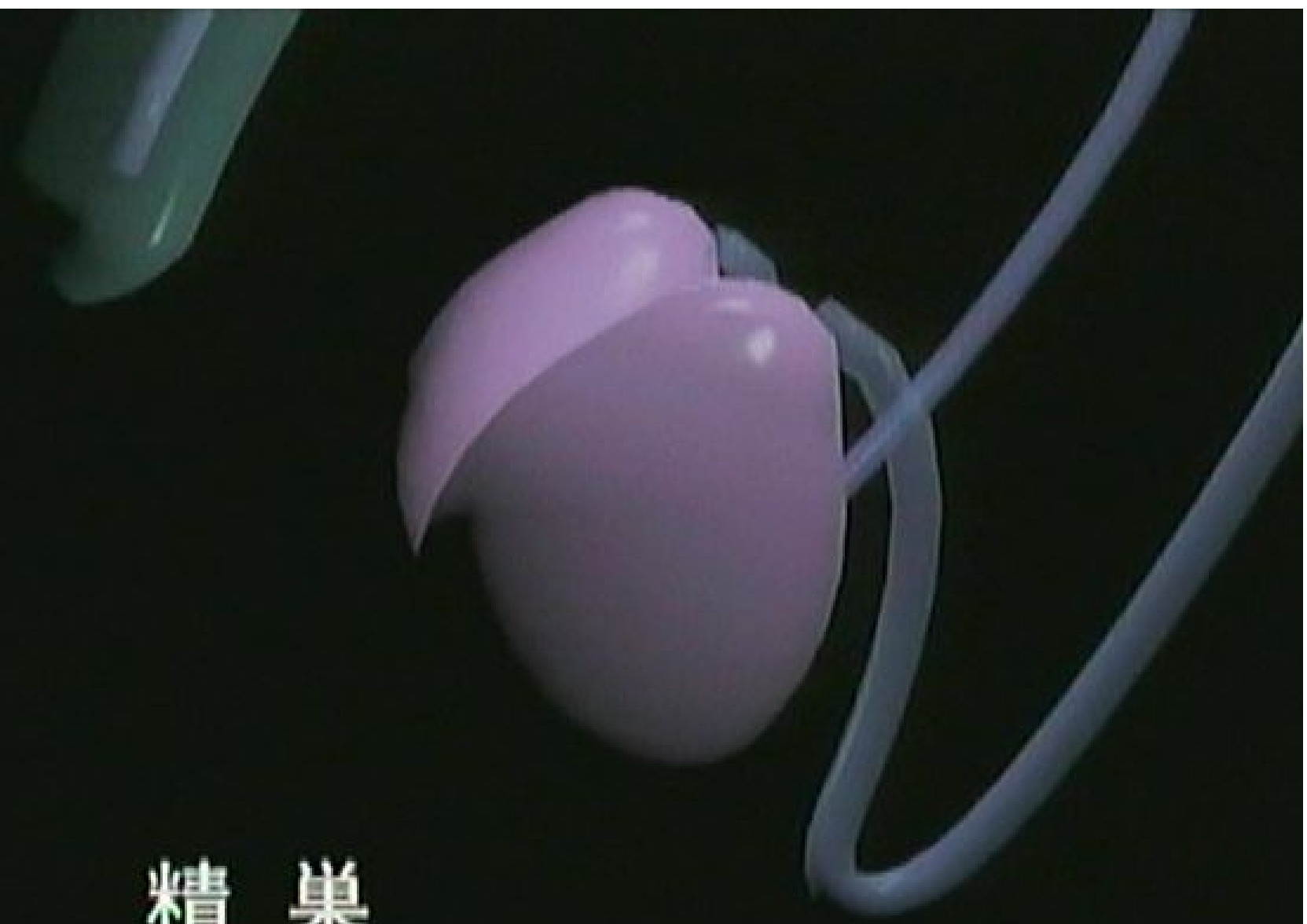
始原生殖細胞



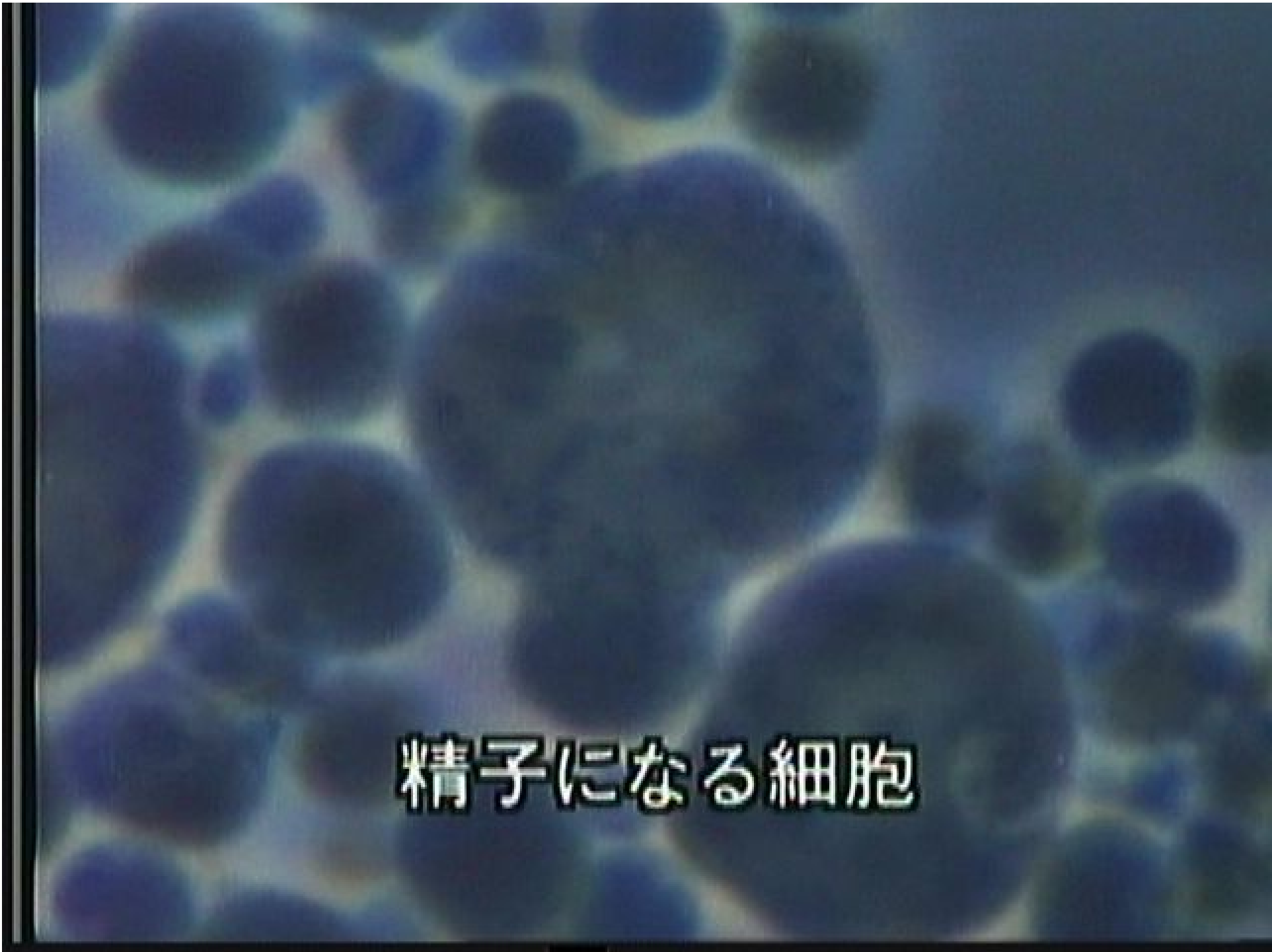
卵になる細胞

A microscopic image showing a large, dark, circular cell (the mature egg cell) surrounded by a dense layer of smaller, lighter-colored cells (follicular cells). The overall texture is granular and complex.

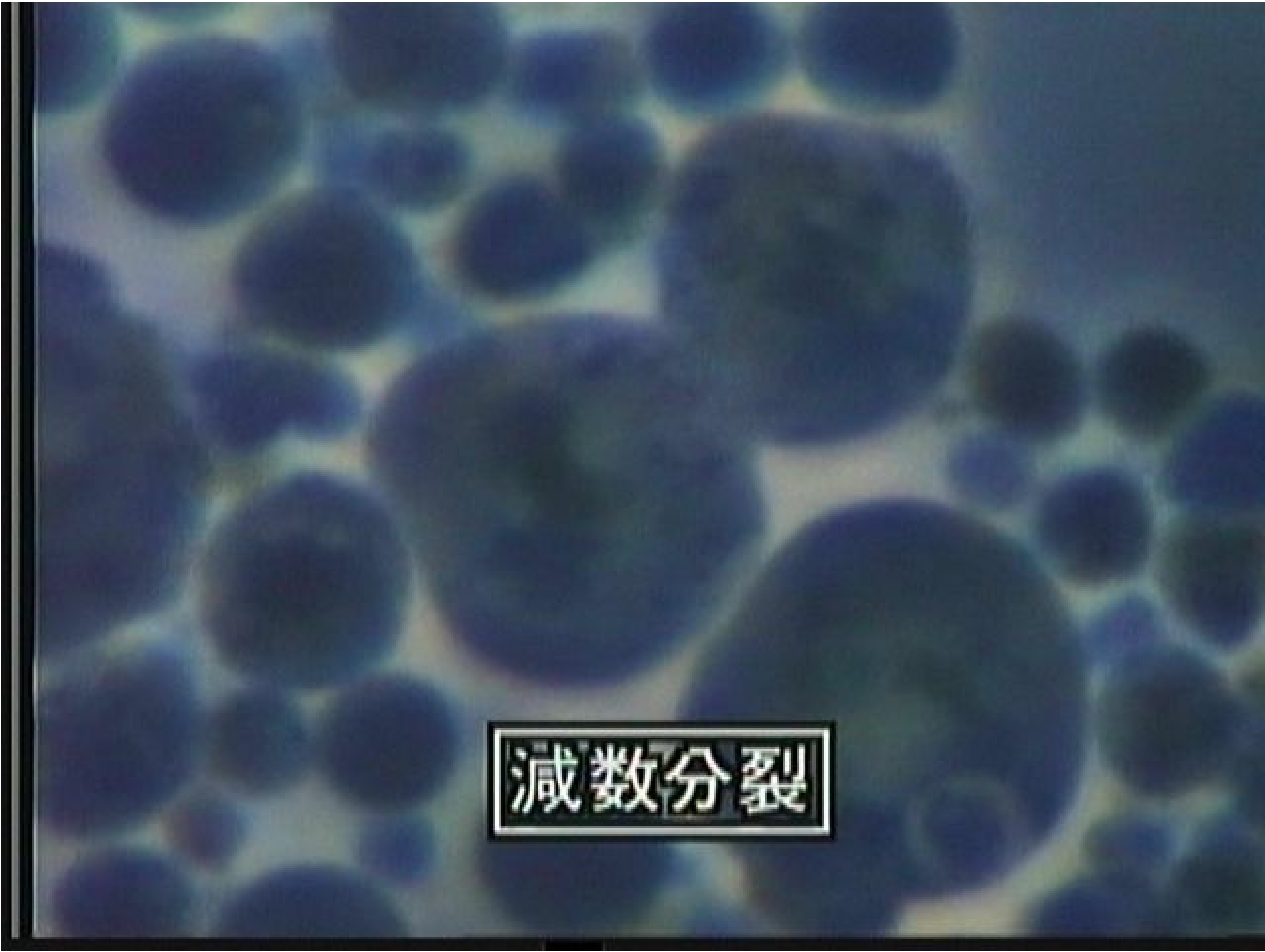
成熟した卵細胞

A 3D anatomical model of a testis and epididymis. The testis is a large, oval, pinkish-purple structure. The epididymis is a smaller, lighter-colored structure on top of the testis. A blue, curved line represents the vas deferens, which loops around the epididymis. The background is black.

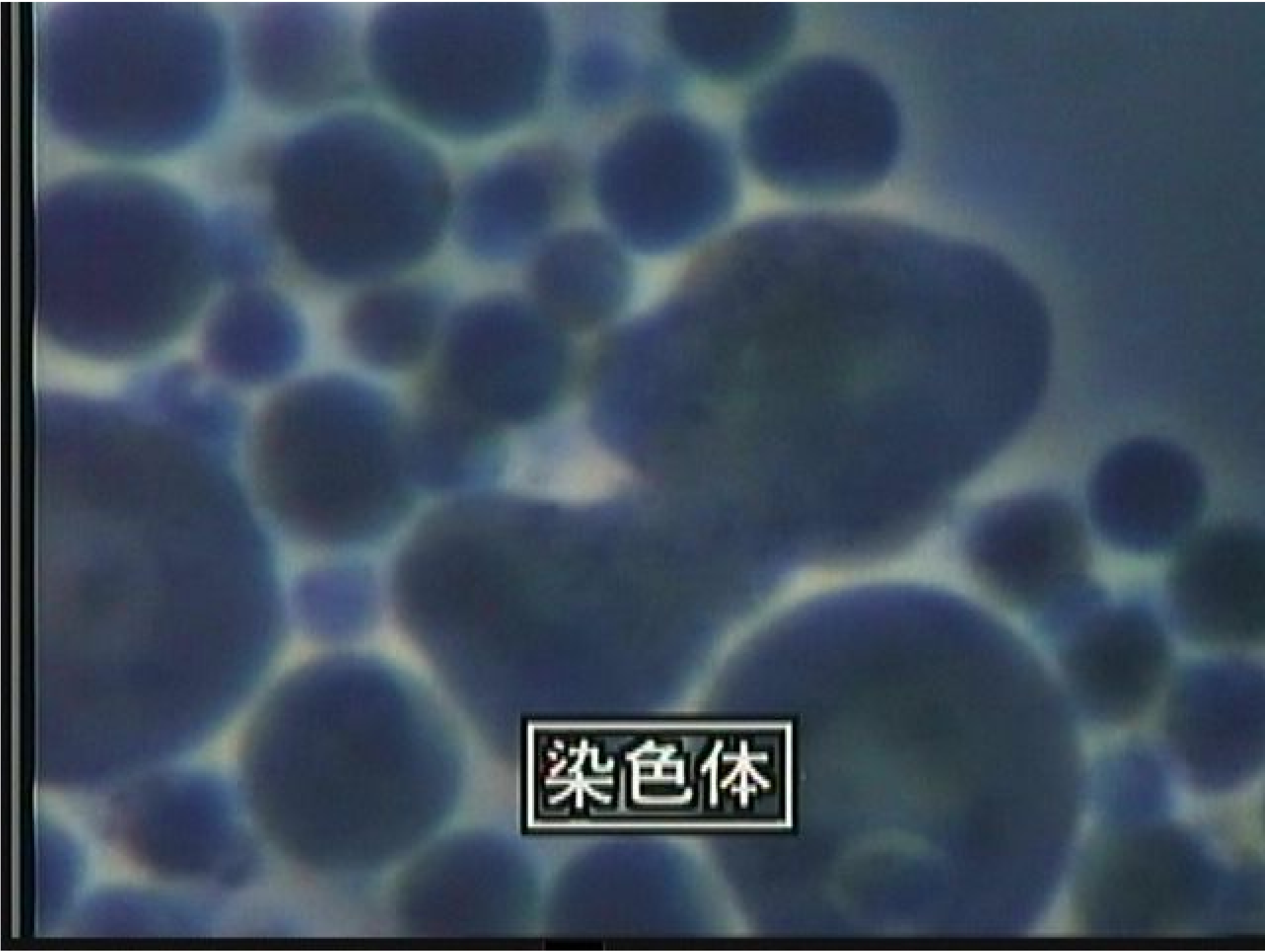
精 巢



精子になる細胞

A microscopic image showing numerous cells in various stages of meiosis. The cells are stained, likely with a histological stain like hematoxylin and eosin, showing dark purple nuclei and lighter cytoplasm. The cells are of varying sizes, with some appearing larger and more prominent than others, suggesting different stages of the process. The background is a light, slightly textured blue-grey.

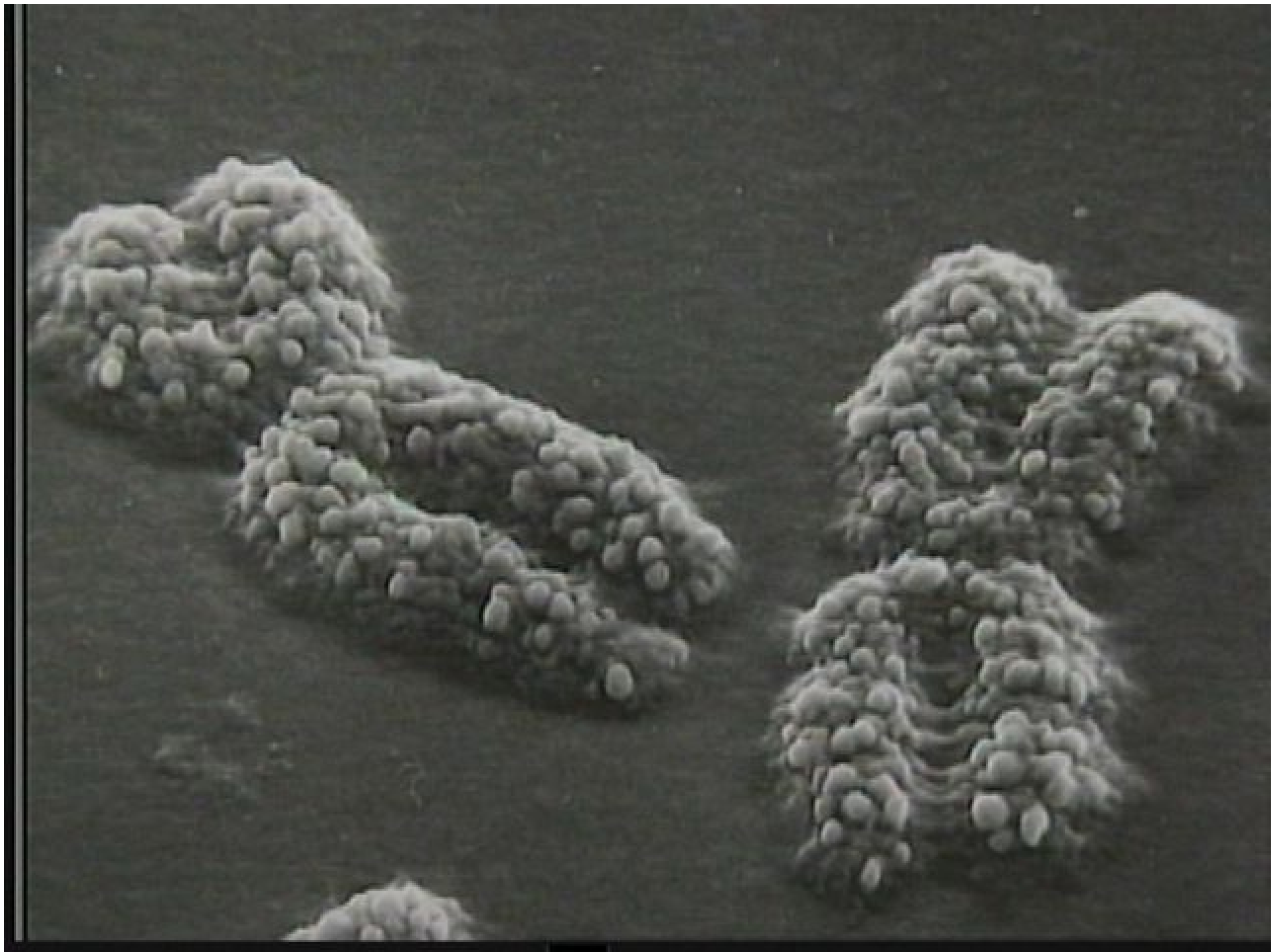
減数分裂

A microscopic image showing numerous dark, oval-shaped structures, which are chromosomes, against a lighter blue background. The chromosomes vary in size and are densely packed in some areas. A white rectangular box with a black border is superimposed on the lower center of the image, containing the Chinese characters '染色体' (Chromosome).

染色体









精子になる細胞

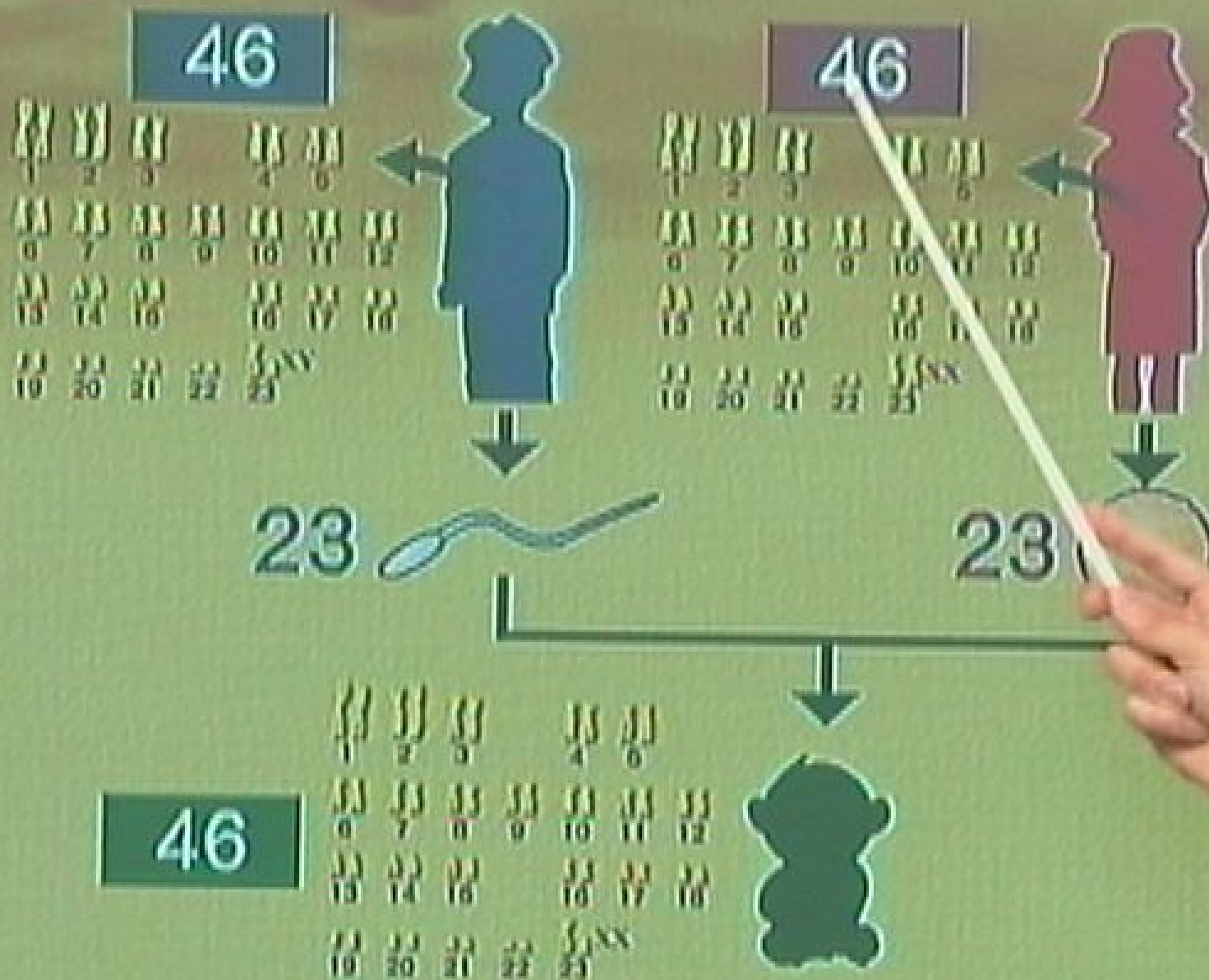
A man with dark hair, wearing a grey polo shirt with white horizontal stripes, is shown from the chest up. He is gesturing with both hands, palms facing outwards, as if explaining something. The background consists of a wooden door with vertical panels and blue lattice-patterned glass on either side.

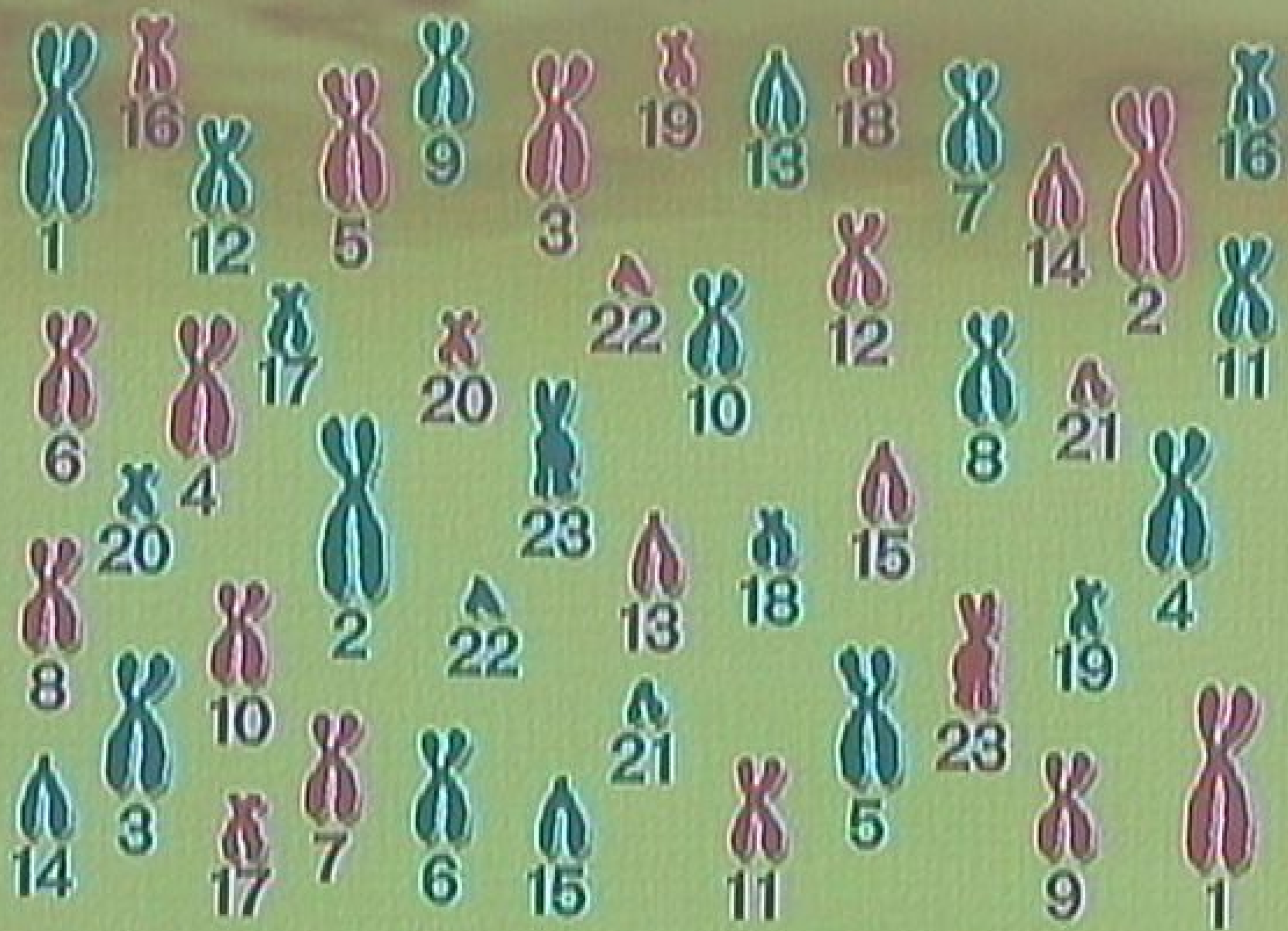
**いつできる？
準備は胎児の時から**

A man with dark hair, wearing a grey polo shirt with white and pink horizontal stripes, is shown from the chest up. He is holding a glowing green, translucent orb in front of him with both hands. The background consists of a wooden door with vertical panels and blue lattice-patterned glass on either side.

どこで？
精子は精巣、卵は卵巣

減数分裂







対合(たいごう)

減數分裂



母細胞

前期

第一分裂

減數分裂



中 期

後 期

終 期

第一分裂

減数分裂



前期

中期

後期

終期

第二分裂

精子の形成

精子の形成過程

始原生殖細胞

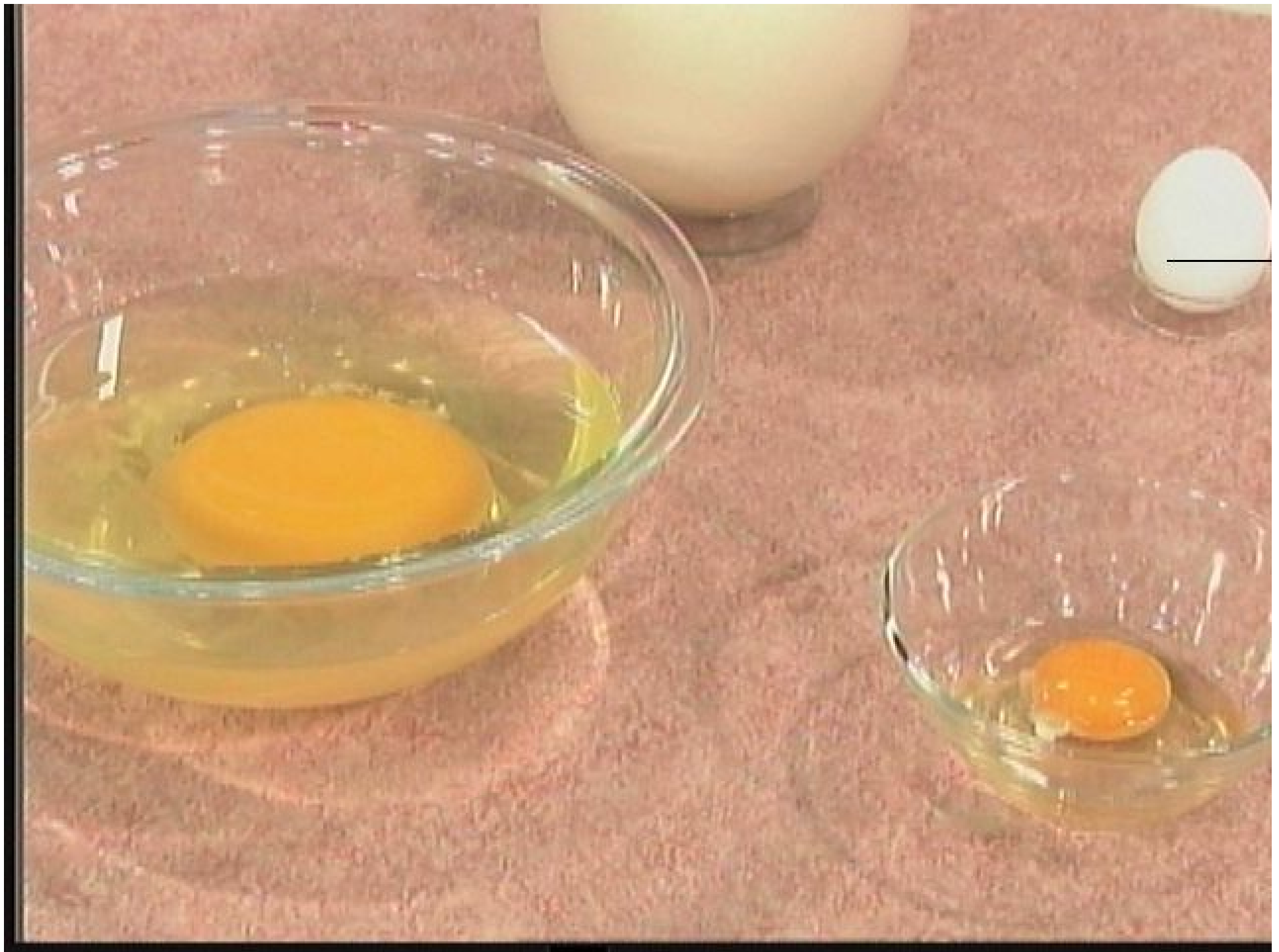
生殖腺へ移行

精原細胞

增殖期

成長期

卵の形成





なぜ卵細胞は大きい？

卵の大きさ



ダチョウ

ニワトリ



ヒトまたは
ウニの卵

標準的な
体細胞



卵の形成

始原生殖細胞

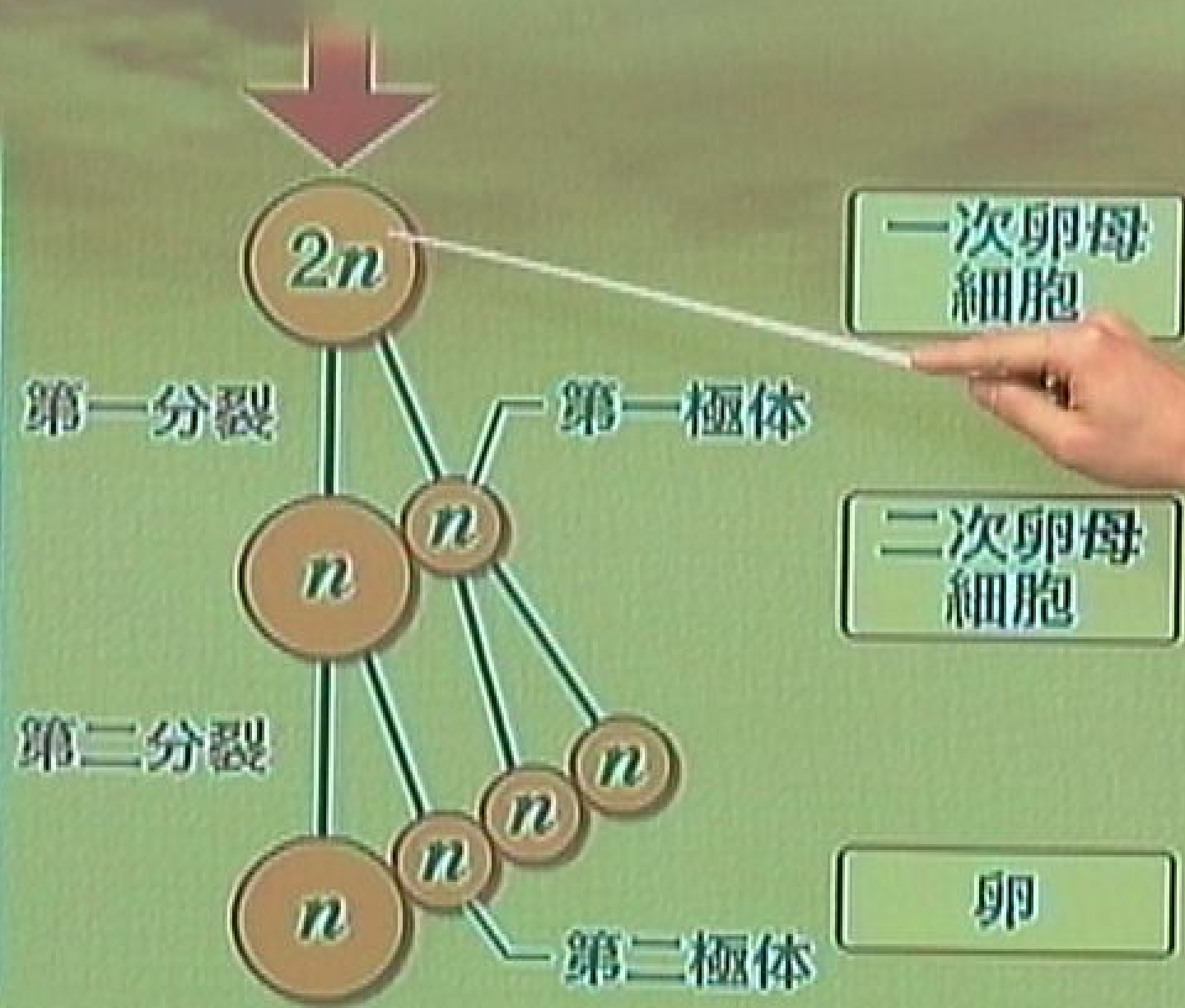
生殖腺へ移行

増殖期

成長期



減數分裂期







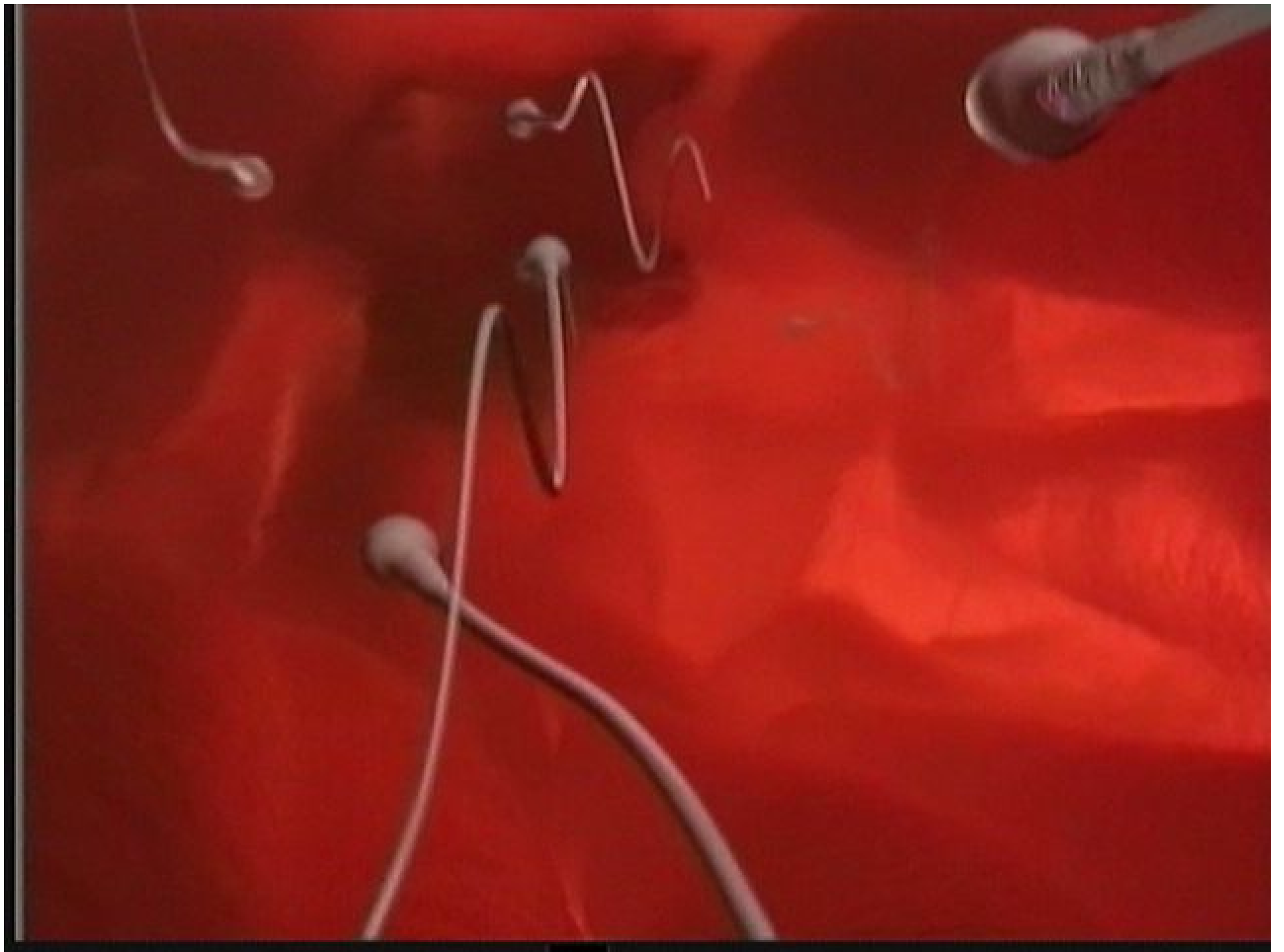
精巢

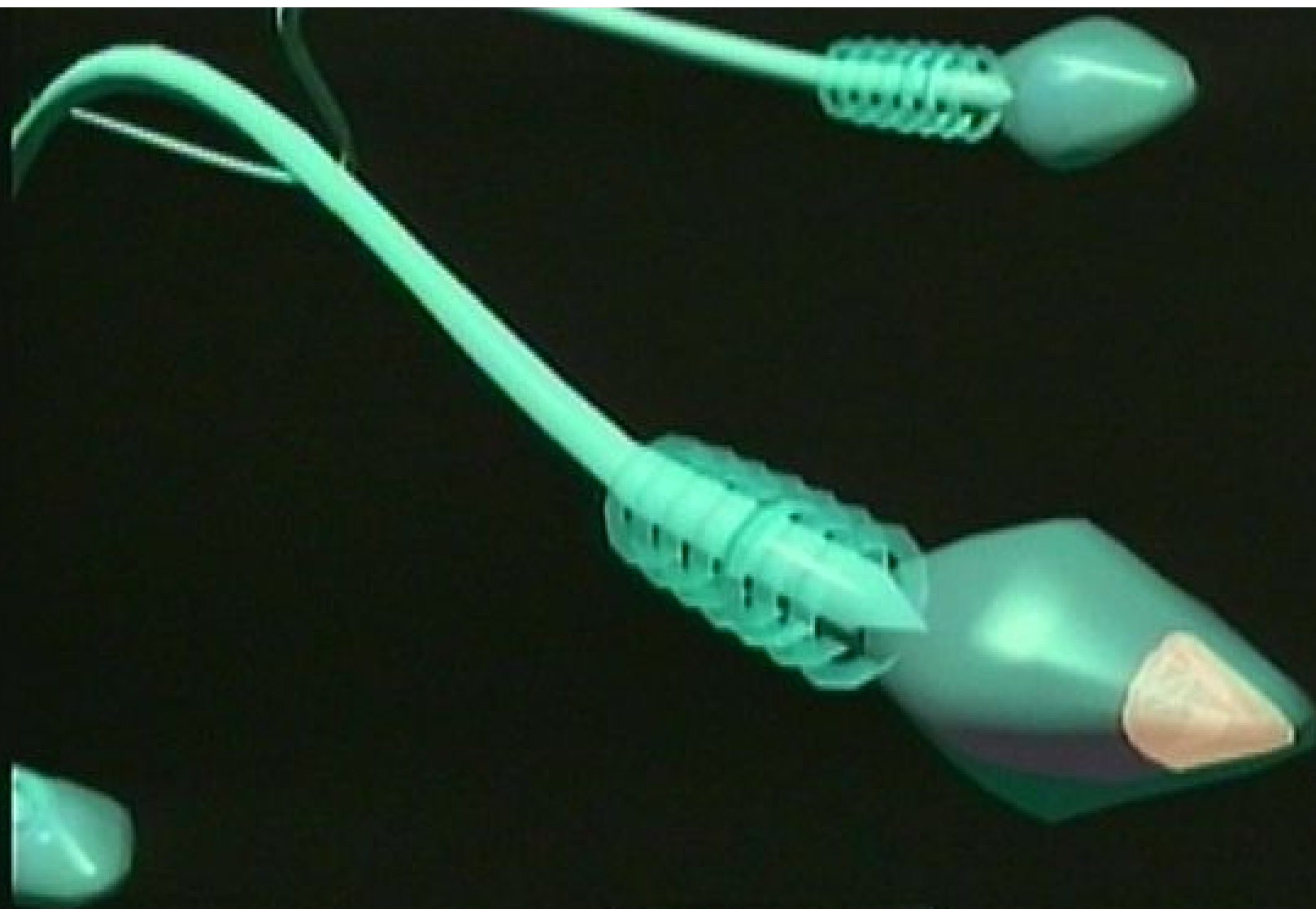




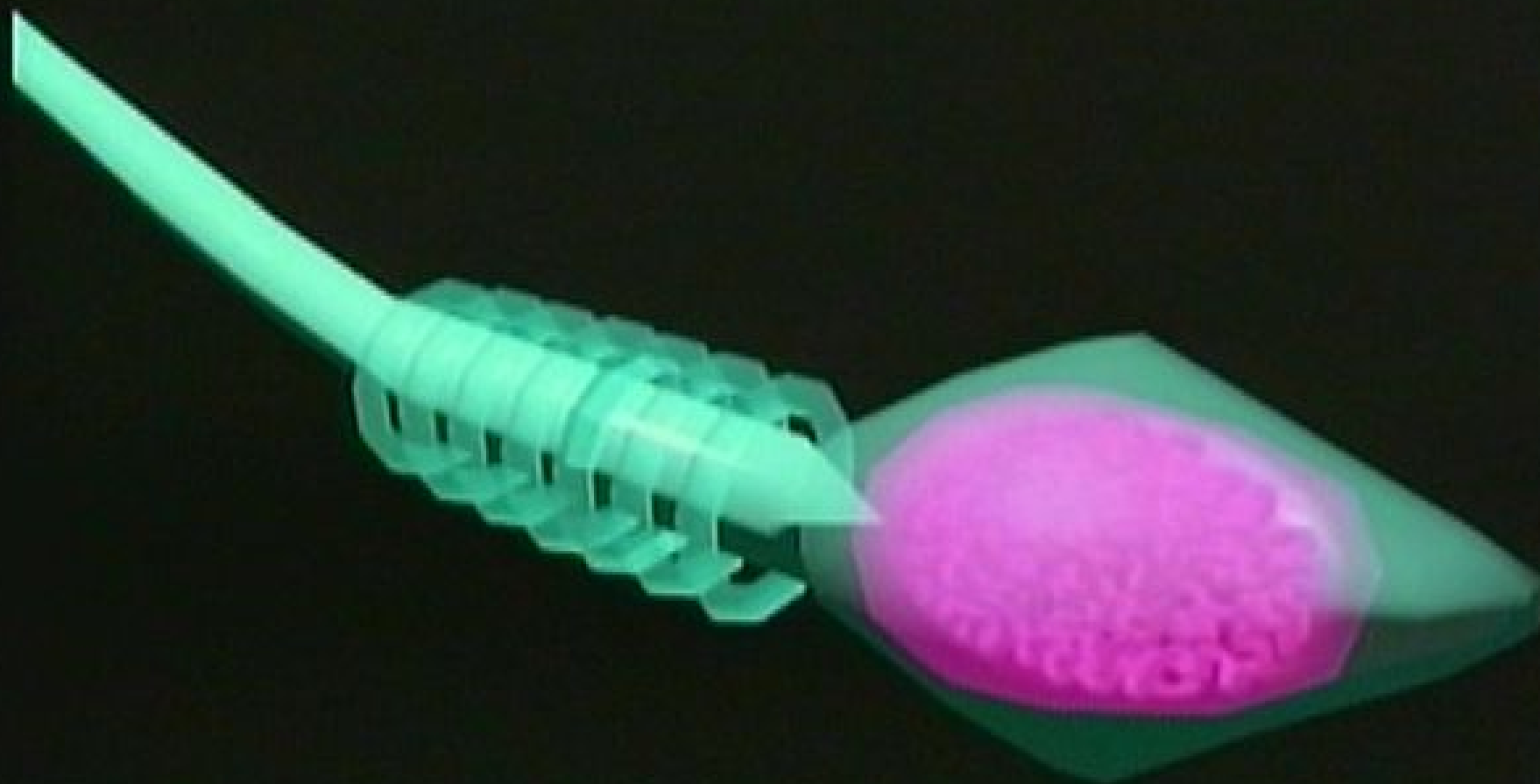
This is a medical illustration of the female reproductive system. A large, light-colored, oval-shaped ovary is the central focus. It is connected to a smaller, pear-shaped uterus on the right side. Two fallopian tubes extend from the upper corners of the uterus towards the ovary. The background is a solid light blue. The Chinese characters '卵巢' (Ovary) are printed in white with a black outline at the bottom center of the image.

卵巢

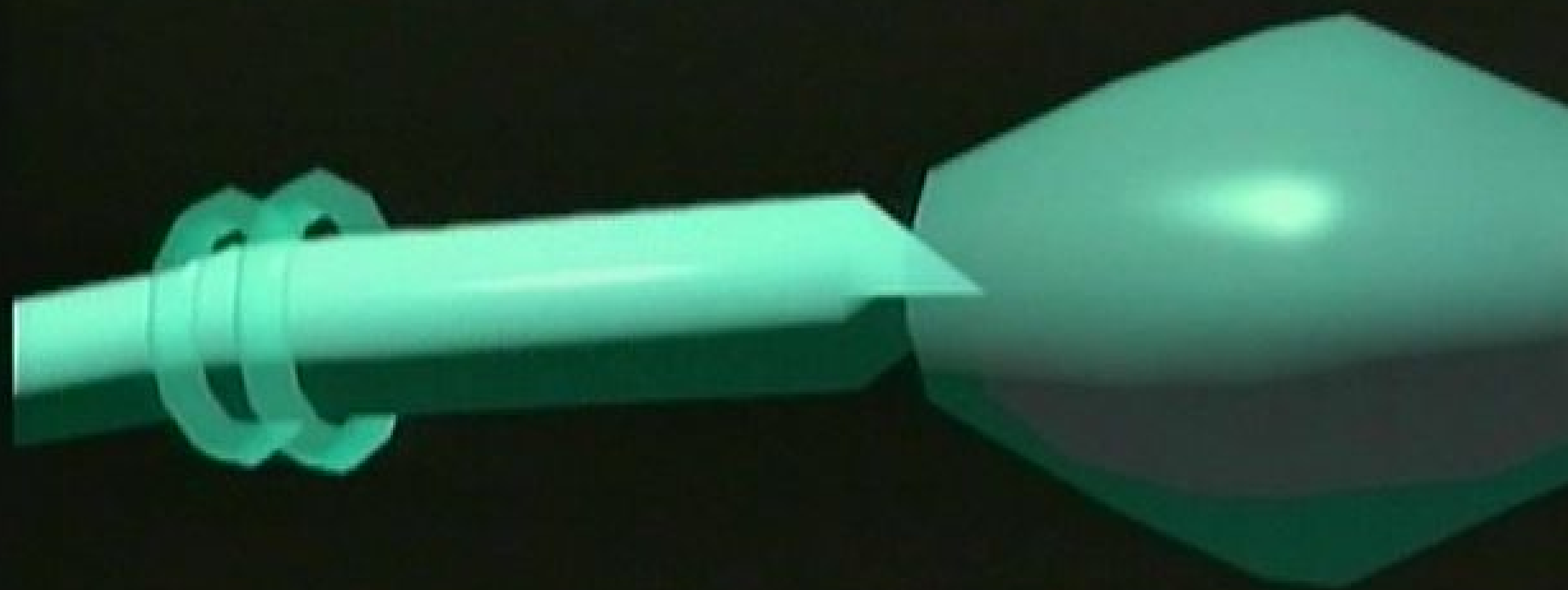




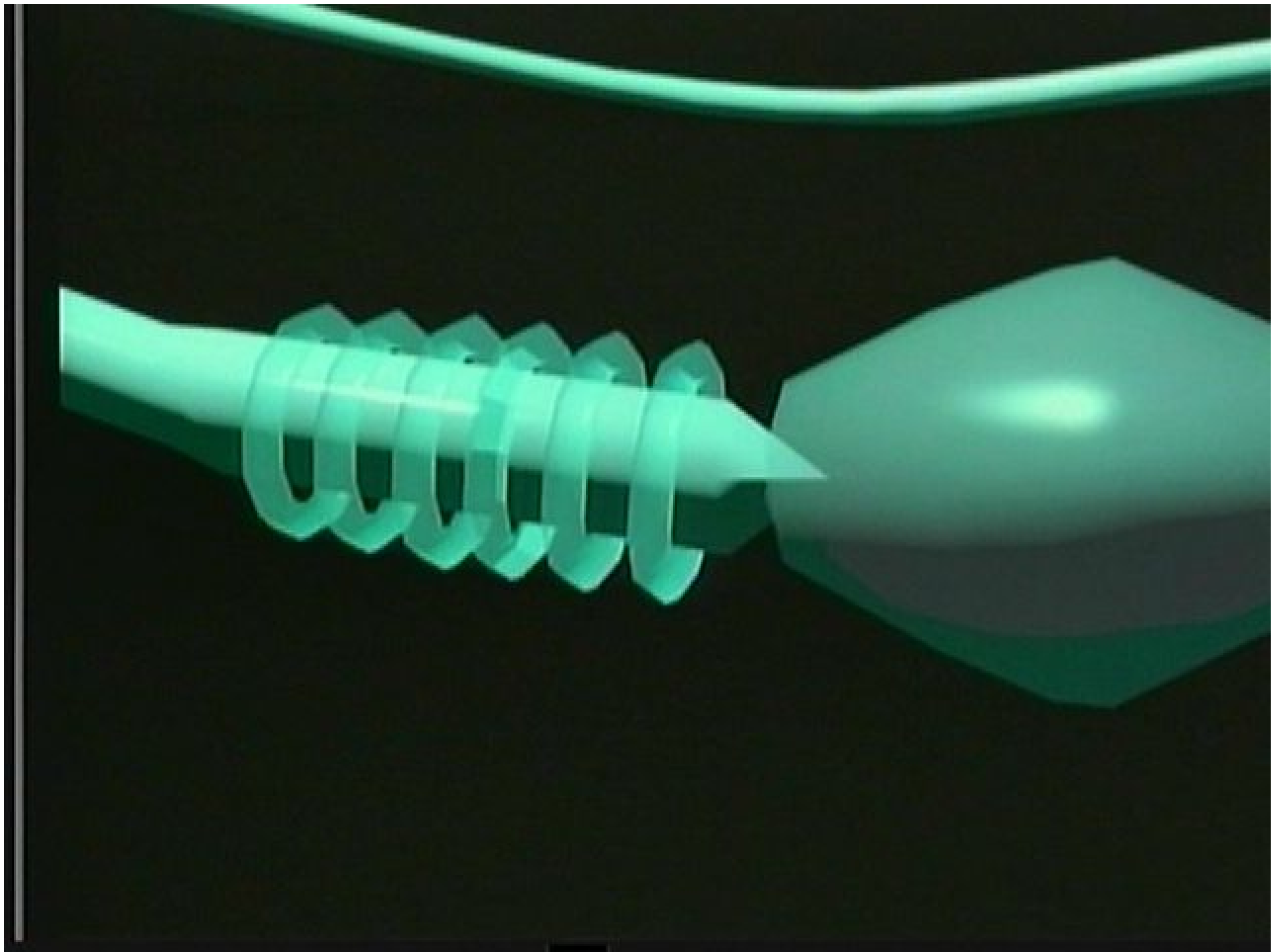
酵 素

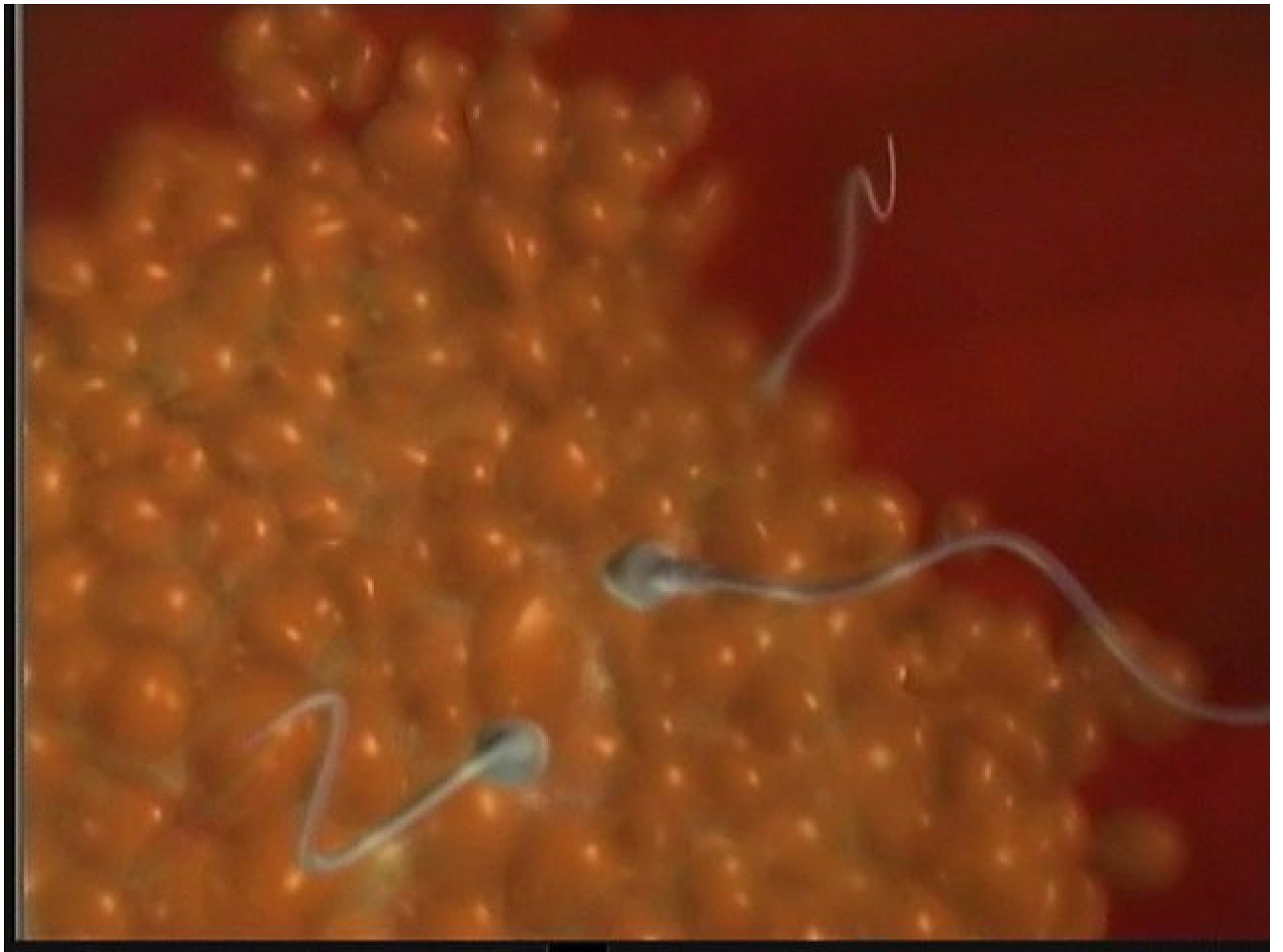


遺伝物質・DNA



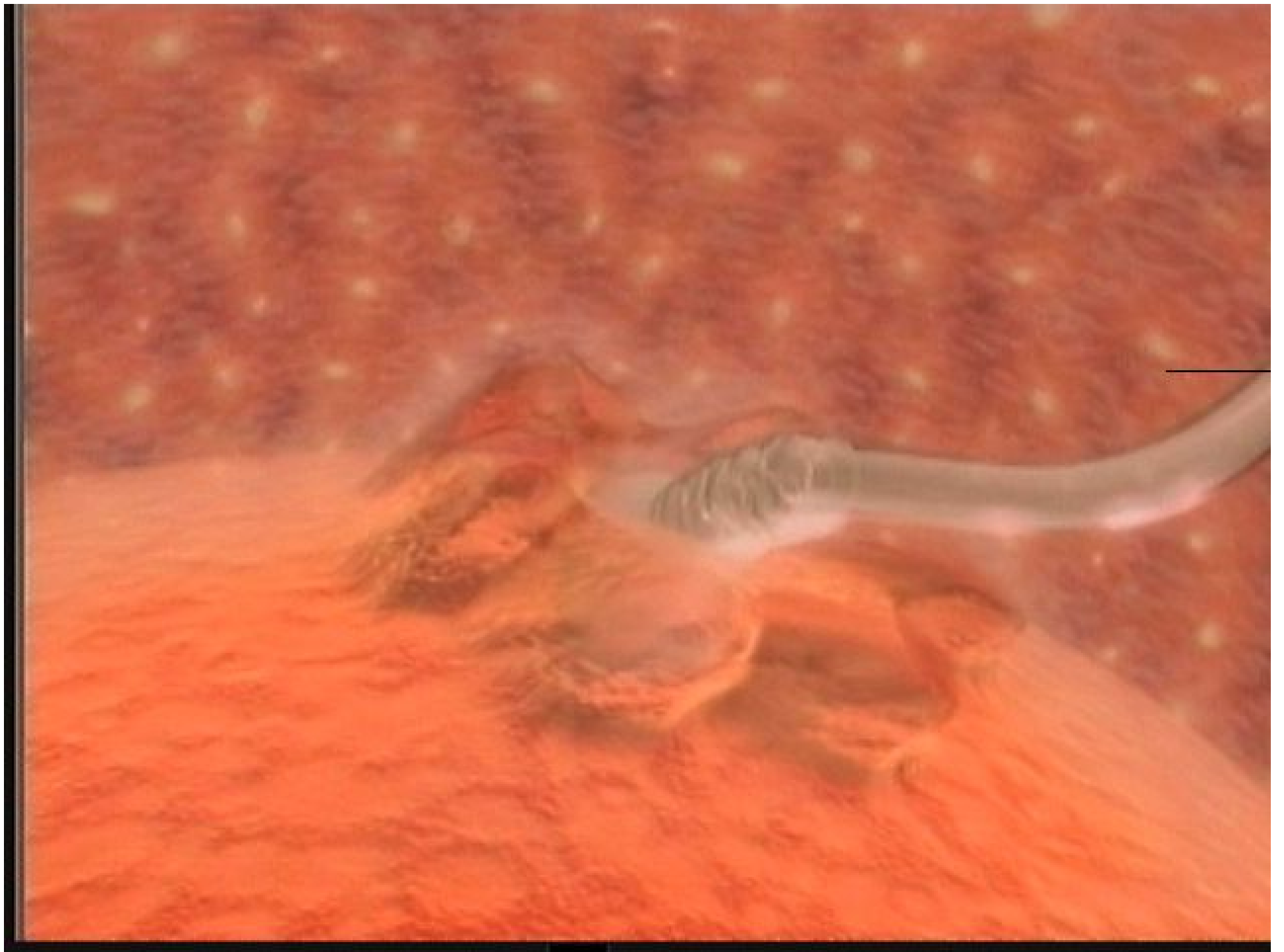
ミトコンドリア

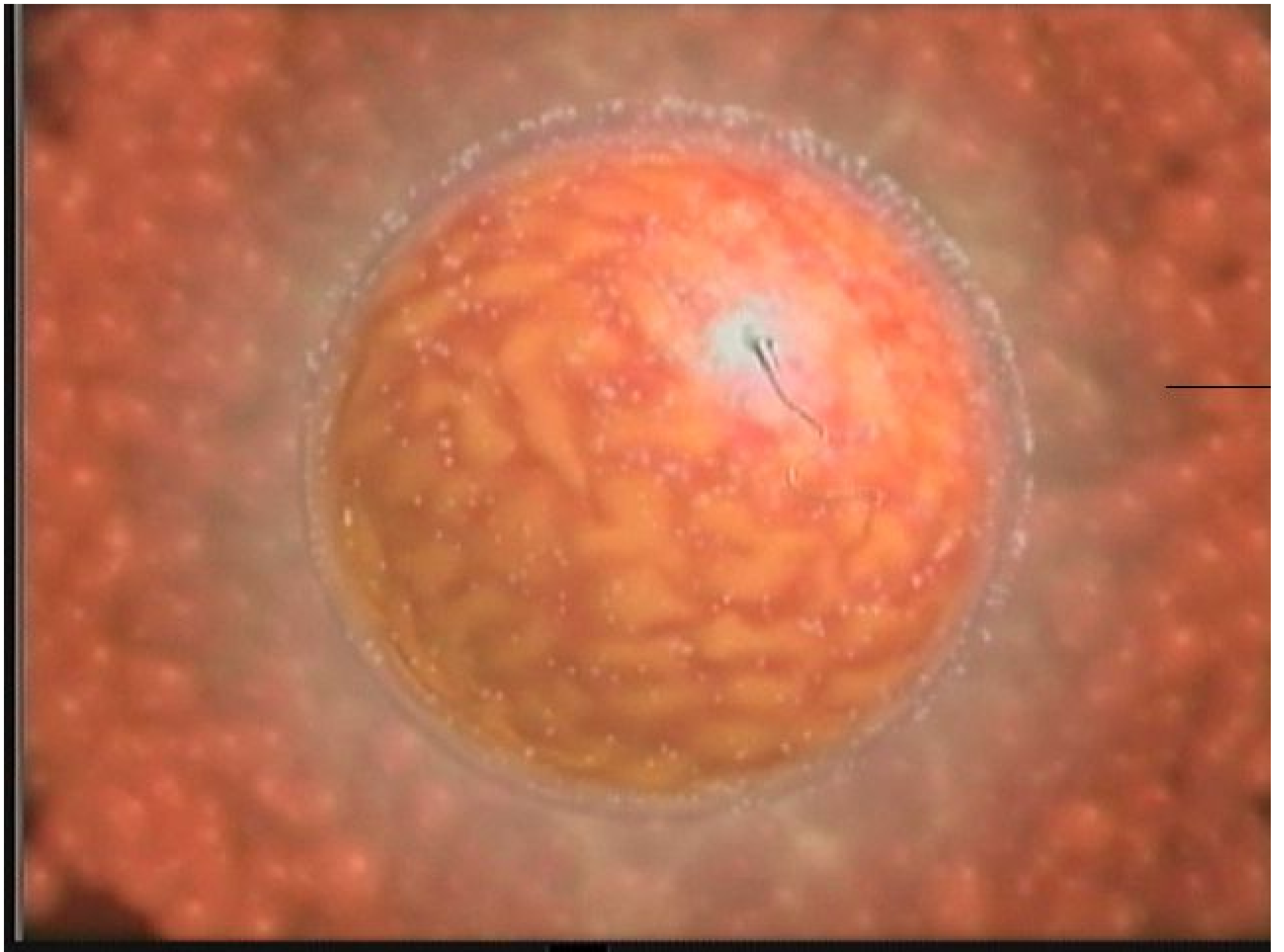


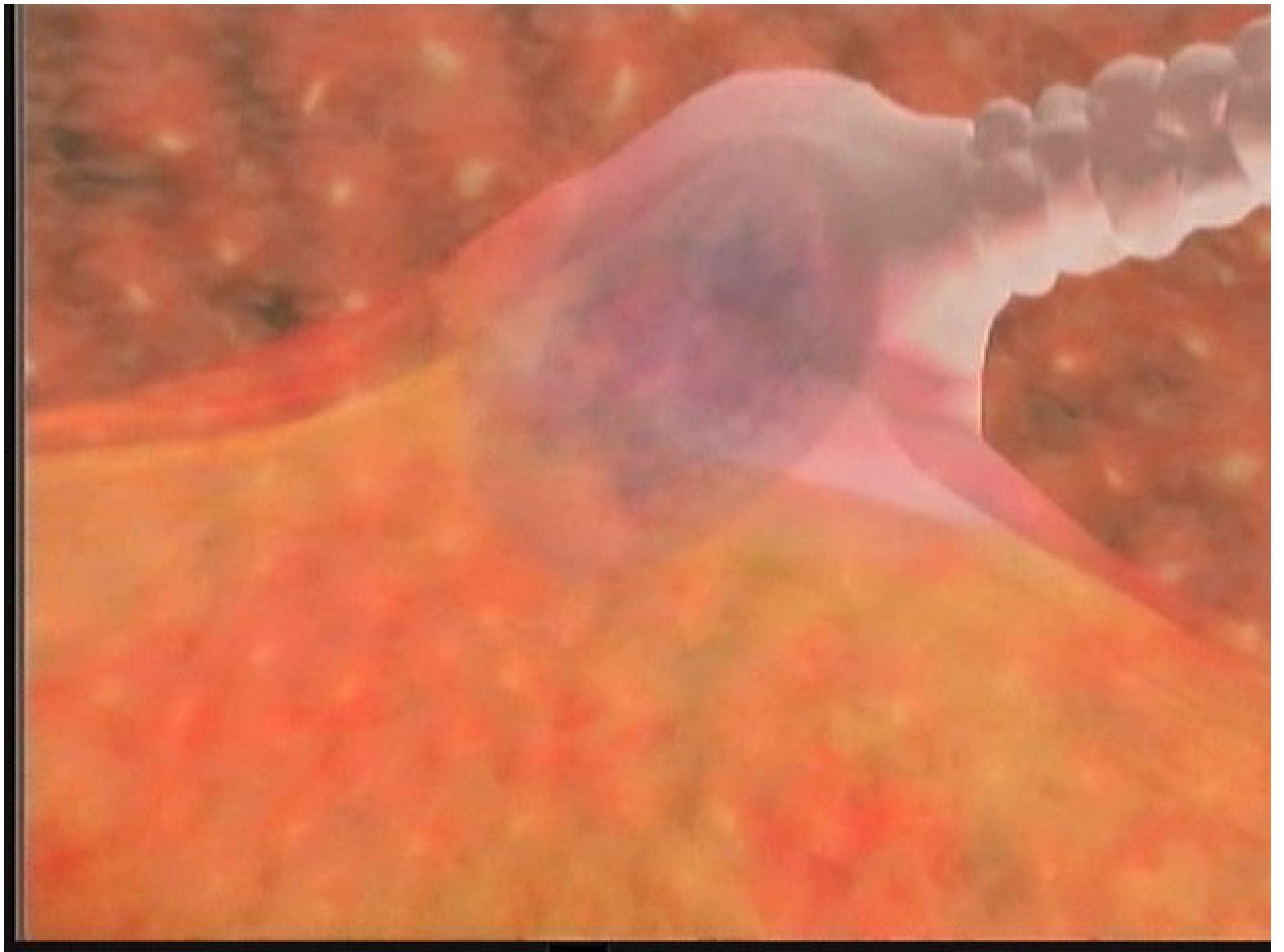


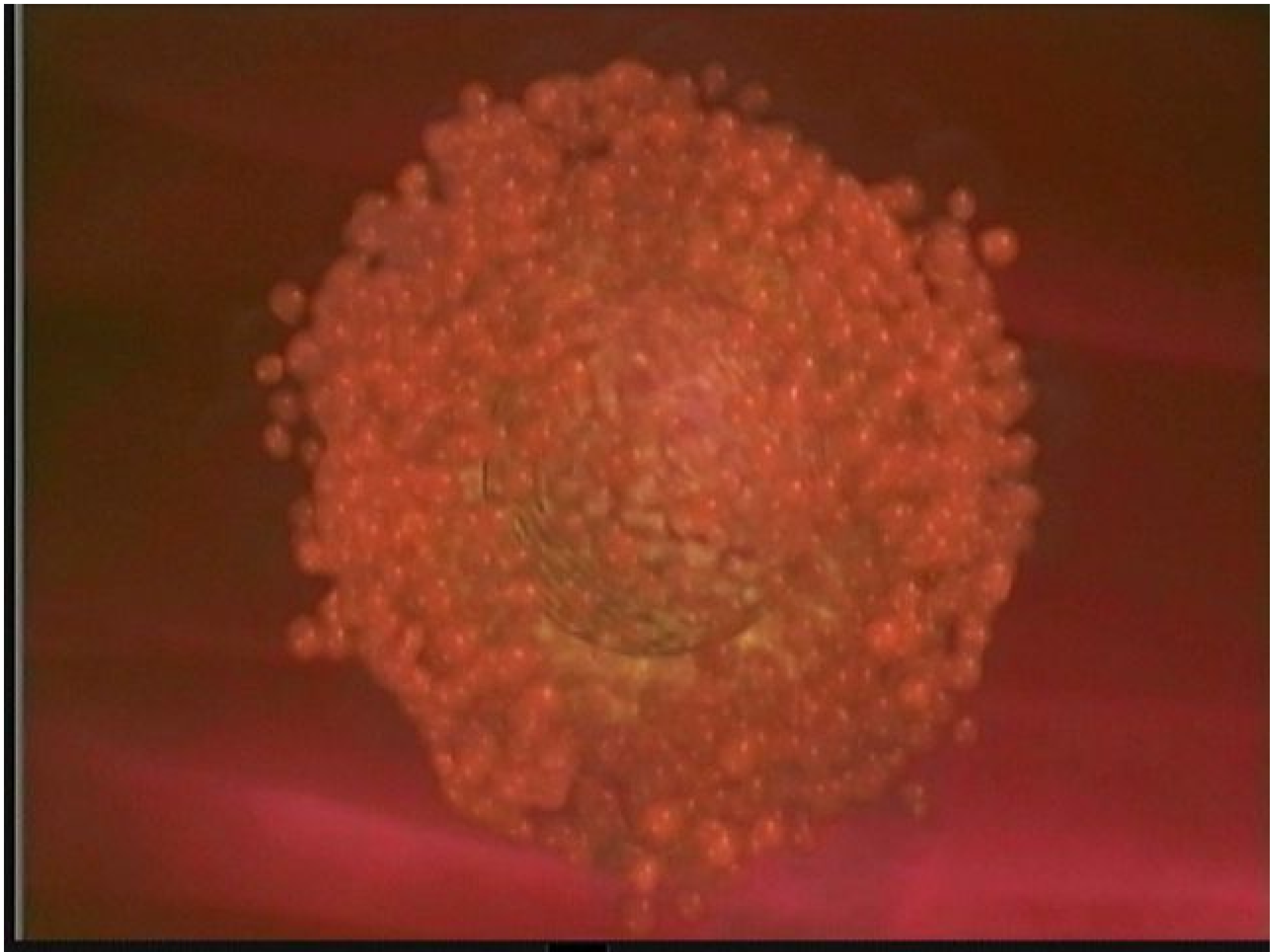


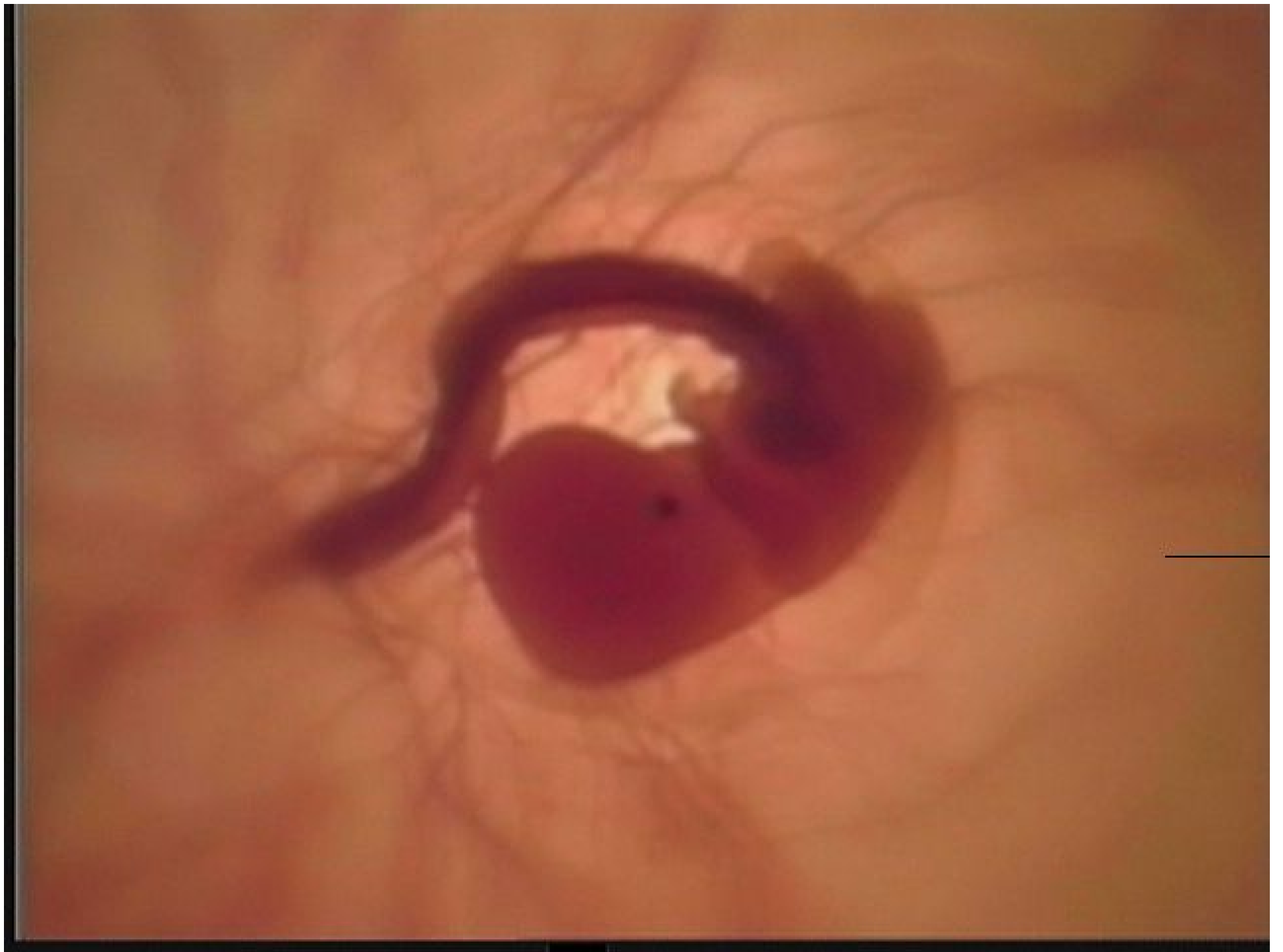
透明帶











今日のまとめ

- ① 精子は、情報 + 運動
卵は、情報 + 栄養
- ② 減数分裂

生殖細胞の作り方



NHK 高校講座

生物

<http://www.nhk.or.jp/kokokoza/>

終

制作・著作

