DETERMINATION OF TIME SINCE DEATH

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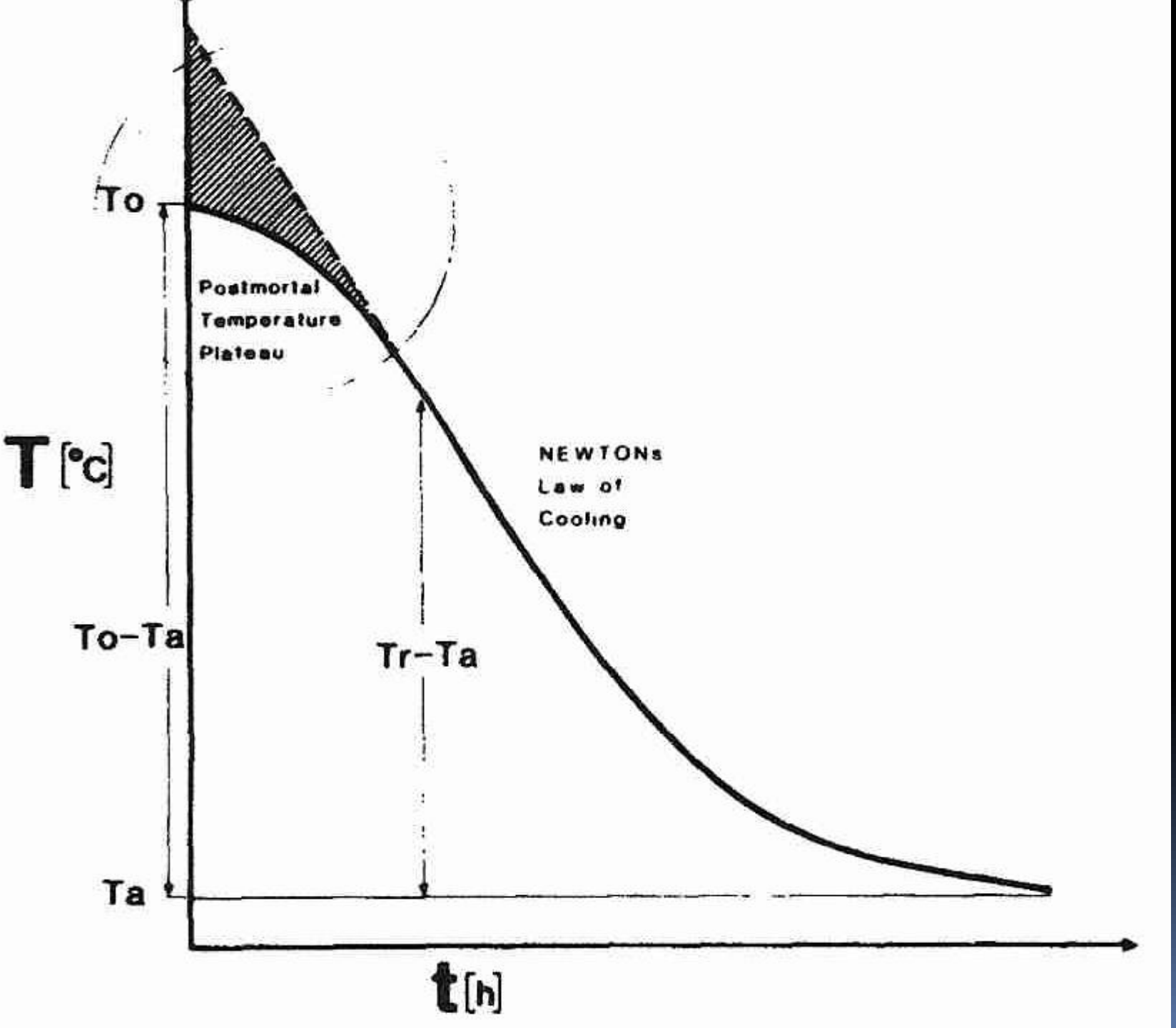
Estimation of the time since death by body cooling

- the human body cools after death (except enviroment is above 37°C)
- cardiac arrest → the skin surface immediately begins to lose heat → „core“ of the body
- The typical rectal cooling curve – sigmoid/double exponential curve


To
Postmortal
Temperature
Plateau
T [°C]
NEWTONs
Law of
Cooling
To-Ta
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Factors affecting the cooling curve

- initial body temperature
- usually 37°C
- exercise before death, febrile illness can raise

- the body dimensions
- the mass : surface area ratio
- the amount of subcutaneous and abdominal fat

- The ambient temperature
- the major factor of cooling!!!

- Posture
- fetal position x extended posture

- Clothing and coverings
- wet clothing accelerate cooling

- The medium around the body
- a body immersed in water will rapidly lose heat (esp. moving water)

Methods of measuring body temperature

- touching with the hand → estimation of the temperature
- The traditional method : placing a mercury thermometer in the rectum
- rule-of-thumb 1°C/ hour

Spot check in average temperature

- If the body feels warm and is flaccid, it has been dead less then 3 hours
- If the body feels warm and is stiff, it has been dead from 3 to 8 hours
- If the body feels cold and is stiff, it has been dead from 8 to 36 hours
- If the body feels cold and is flaccid, it has been dead more than 36 hours

- Henssgeś nomogram method

- for ambient temperature up to 23°C / above 23°C
- Software created by Henssgheś son…

PERMISSIBLE VARIATION OF 95 % (± h)

TEMPERATURE TIME OF DEATH RELATING NOMOGRAM

for ambient temperatures up to 23 °C