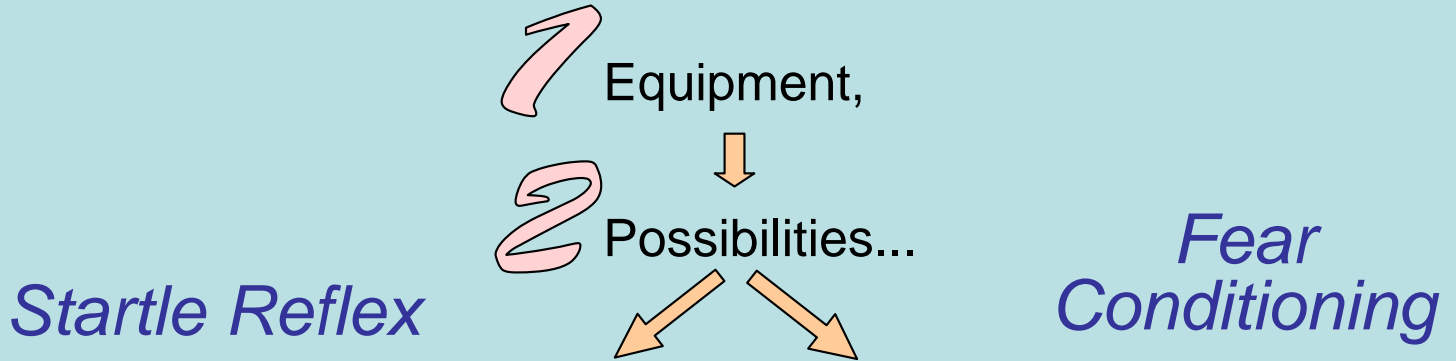


STARTLE REFLEX & FEAR CONDITIONING

Attention, Anxiety and Memory



PULSE

Startle reflex

POTENTIATED-STARTLE REFLEX

B > A

PREPULSE INHIBITION

No response

B < A

STANDARD PARADIGM

Conditioning → **Test**

Context-dependent Fear

Tone-dependent Fear

Fear parameter = $\frac{\text{FREEZING}^*}{\text{Total Time}} \%$

*FREEZING = complete IMMOBILISATION of the animal (except from respiratory movements).

- Detection of movement using the **WEIGHT TRANSDUCER TECHNOLOGY**
- Activity signal recording
- Activity signal re-analysing

IMMOBILITY RESPONSE

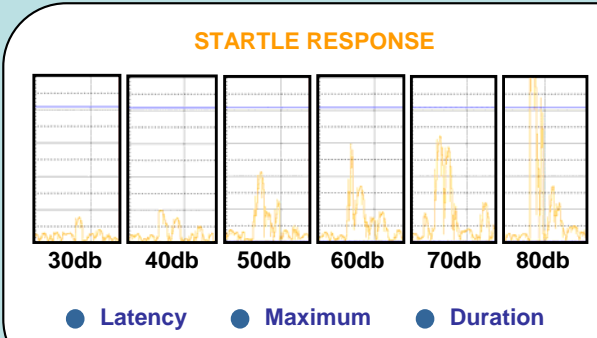
1. Activity

2. Time under activity threshold

Fear parameter = $\frac{\text{IMMOBILITY}}{\text{Total Time}} \%$

Two thresholds for immobility definition:

- ACTIVITY (1) and TIME (2)



Equipment



A) **LE 116 M (Mouse) or R (Rat) THRESHOLD ANIMAL SENSOR**

Includes stimulating chamber with movement sensor, light and loudspeaker. Sound Proof Box with an adjustable incandescent 40W light and ventilator producing a constant background noise.

External dimensions: 67 x 53 x 55 (h) cm

B) **LE 111 LOAD CELL COUPLER**

Signal amplifier for the Movement Transducer. It dispose an indicator of the activity of the animal and a socket ready to have an Activity-meter connected. It is needed one LE 111 for every LE 116.

Filters: 0,2 – 0,5 – 1 Hz

Gain: x200 – x500 – x1000 – x2000 – x5000

Dimensions: 29 x 26 x 11 (h) cm

C) **LE 114 ACOUSTIC STIMULI**

Appropriate to produce acoustic stimuli. Up to 4 stations (LE 116) may be connected to a single LE 114 unit. It is composed by 2 audio generators (pre-pulse and pulse) and a white noise generator.

Pre-pulse: adjustable from 200 to 20.000 Hz – 120 dB

Pulse: adjustable from 200 to 20.000 Hz – 120 dB

White Noise: from 0 to 100 dB

D) **LE 100-26 SHOCK GENERATOR**

It is necessary to have one unit LE 100-26 for each LE 116 station if electric stimulation is required.

Shock: adjustable from 0 to 2mA

E) **RESTRAINER**

Necessary complement in Startle Reflex experiments. It is easily placed on the electrifiable grid of the stimulating chamber. It is necessary to know the weigh of the animal before ordering the restrainer.

F) **SOFTWARE**

Two Basic Software:

STARTFEAR-ST: Software to control up to 8 Startle Reflex stations

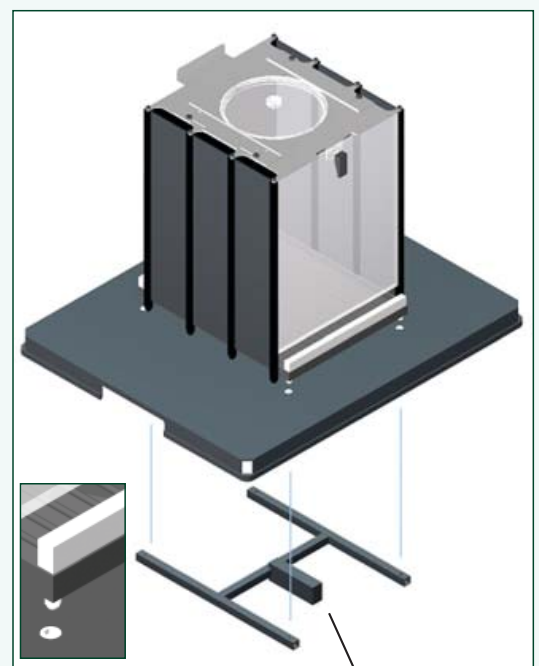
STARTFEAR-FE: Software to control up to 8 Freezing stations

They can be extended by the following upgraded extensions:

UPGRADE-FE: to allow the STARTFEAR- ST run also for Freezing

UPGRADE-ST: to allow the STARTFEAR- FE run also for Startle Reflex

The grid floor is easy to handle and to fit into the four leaning points, and requires no adjustments.



TRANSDUCER