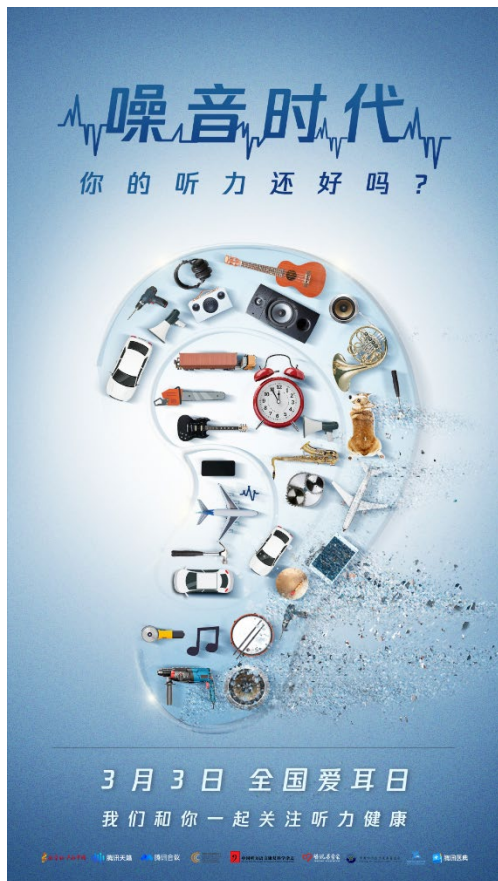


Hearing Protection

Simeon Shang

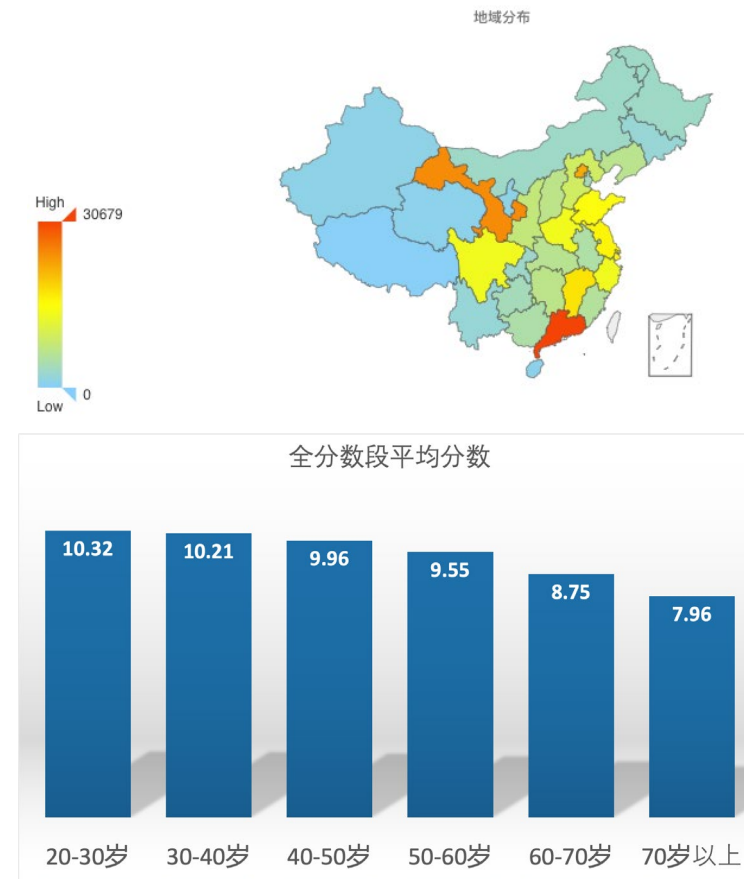


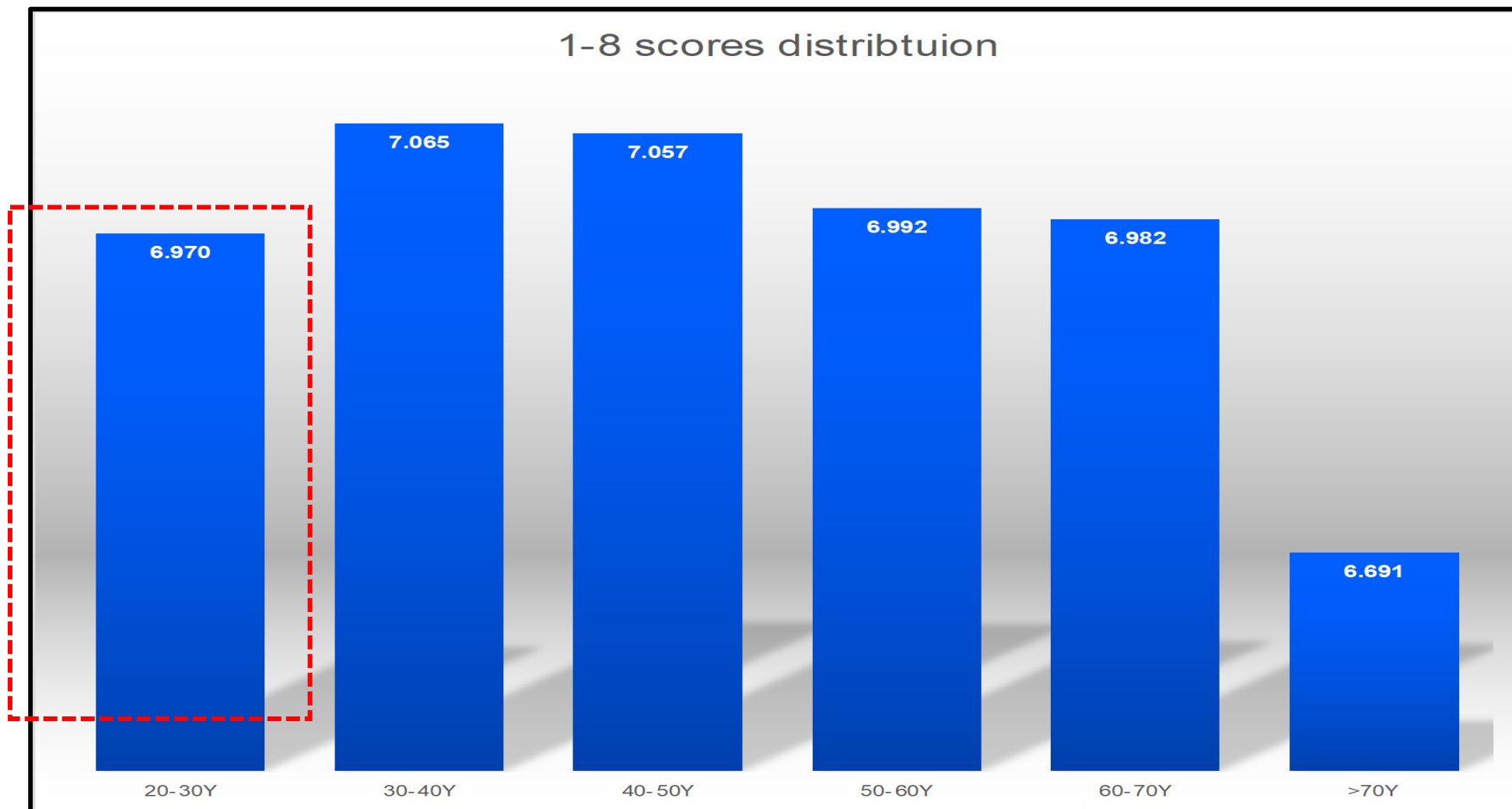


依次输入您刚听到的数字

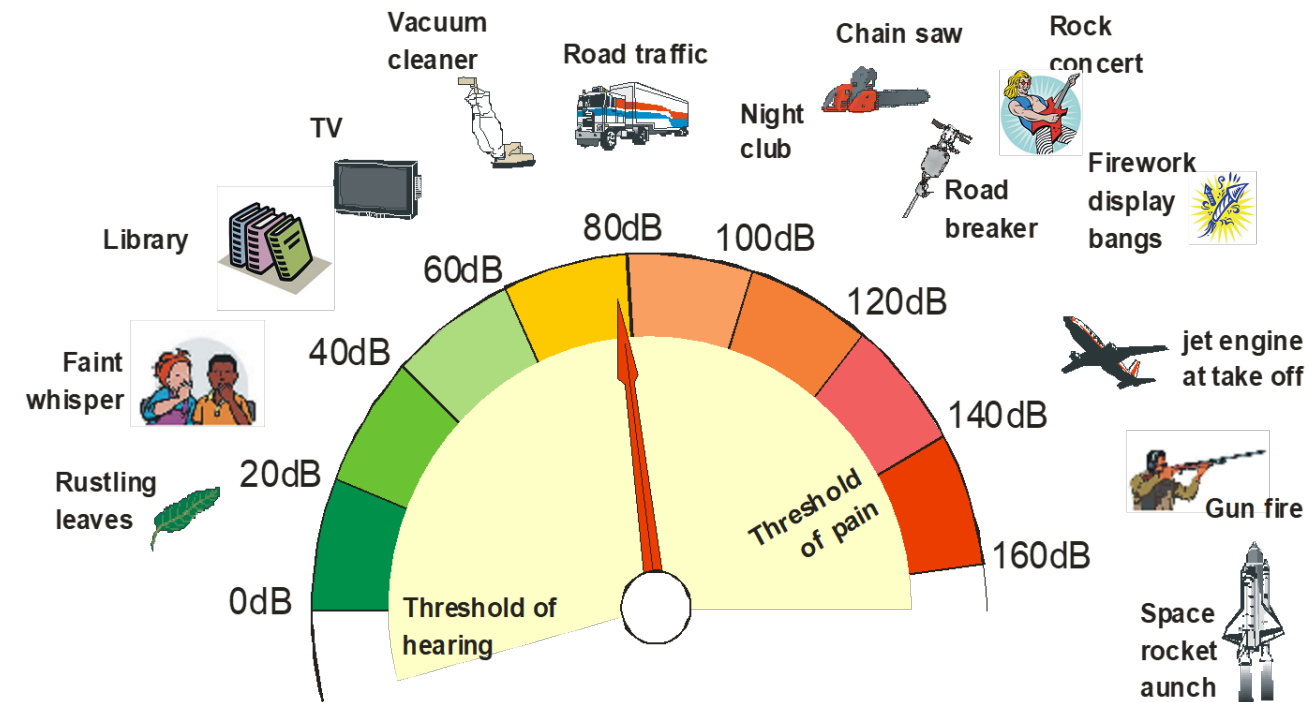
21%

1	2	3
4	5	6
7	8	9
跳过	0	下一步





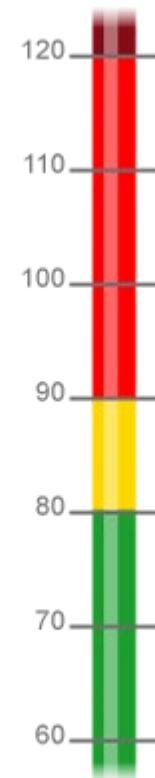
Maximum Loudness

MAXIMUM EXPOSURE
(WITHOUT PROTECTION)
BEFORE DAMAGE

- From 120 to 140 dB:
Seconds of exposure may
irreversibly damage
the cochlea
- 107 dB : 1 min per day
- 101 dB : 4 min per day
- 95 dB : 15 min per day
- 92 dB : 30 min per day
- 86 dB : 2h per day
- 80 dB : 8h per day

CSD

Noise intensity in dB



European Legislation

105 dB

Discos limitation



100 dB

Walkman limitation



80-85 dB

At work limitation

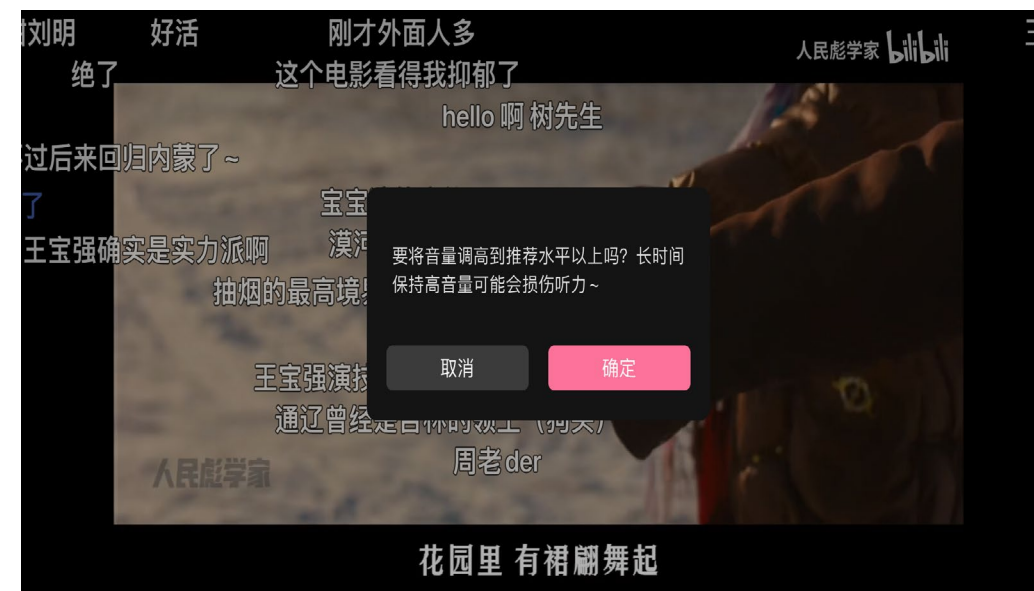
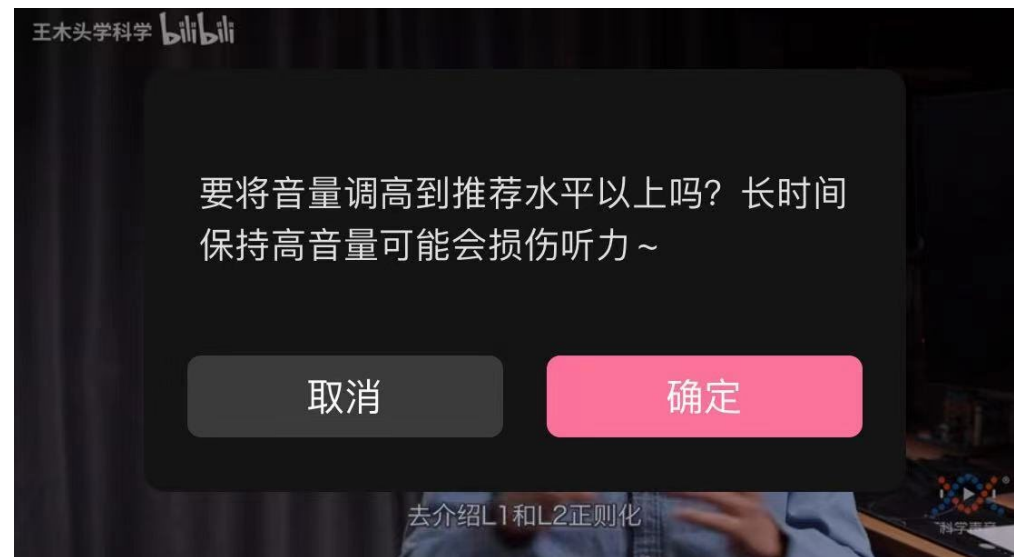
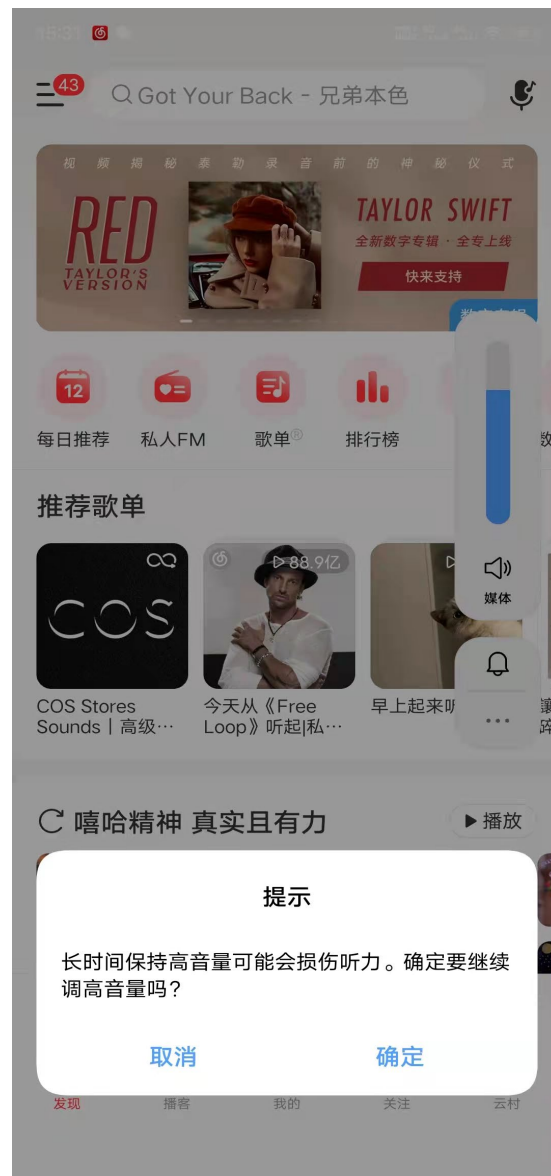


Irreversible damage

Danger: harmful sounds

Harmfulness threshold

No risk



Sound Pressure Measurements

Loudness Level: 0-16

Player: media player(by default)

Type	Loudness at 16 (dBA)	Loudness at 12 (dBA)	Loudness at 11 (dBA)
Headphone 1	93.63	81.7	78.34
Earphone 1	96.63	82.87	79.47
Earphone 2	94.42	80.65	77.5

Call to action



- All games, applications should report their sound dose usage everyday.
- Sound dose calculation should take into account the loudness variation of content
- Sound dose calculation should take into account the acoustic loudness variation of devices, e.g., phones and headsets
- Sound dose calculation needs to be standardized and open-sourced.

Thank You!