Group 10

IE 2250

Lab 7 – Audio

10-13-23

Measure	Dba	Distance from the source	Time of measure	Max exposure time (min)	Exposure time(min)	% of daily dose
1	34	10 cm	30 sec	62914560	300	0.0005
2	62	10 cm	30 sec	97530	300	0.3
3	55	10 cm	30 sec	491520	3	0.0006
4	90	5 cm	30 sec	151	1	0.7
5	65	10 cm	30 sec	48765	120	0.2

Dorsa:

Daily Noise Dose: 16200 khz
Average Hearing Age: 23 age
hear who score:50 hearing is ok

Measure	Dba	Distance from the source	Time of measure	Max exposure time (min)	Exposure time(min)	% of daily dose
1	43	n/a	30 sec	7864320	360	0.005
2	65.6	10 cm	30 sec	42452	240	0.6
3	66.7	15 cm	30 sec	32925	3	0.001
4	96.1	5 cm	30 sec	36.9	3	8
5	69.3	1cm	30 sec	18056	240	1.3

Gabriel:

Daily Noise Dose: 16400 khz
Average Hearing Age: 22
hear who score: 70

Measure	Dba	Distance from the source	Time of measure	Max exposure time (min)	Exposure time(min)	% of daily dose
1	32	1 cm	30 sec	99870639	360	0.0004
2	61.5	10 cm	30 sec	109474	300	0.3
3	59	10 cm	30 sec	195090	3	0.002
4	94.4	5 cm	30 sec	54.7	3	5.5
5	66.7	5 cm	30 sec	32925	120	0.4

Jonah:

Daily Noise Dose:16200khz
Average Hearing Age:24
hear who score: 60

Measure	Dba	Distance from the source	Time of measure	Max exposure time (min)	Exposure time(min)	% of daily dose
1	40	N/A	30 sec	15728640	300	0.002
2	66	10 cm	30 sec	38705	240	0.6
3	60	15 cm	30 sec	154819	3	0.002
4	92	5cm	30 sec	95.2	1	1.05
5	65	10 cm	30 sec	48765	120	0.2

Karsten:

Daily Noise Dose:16400 khz
Average Hearing Age: 22
hear who score: 70

Calculations:

A) 480 / 2 ^ ((Dba – 85) / 3) = Max exposure time
B) Exposure time / max exposure time * 100 = % of daily dose

Questions:

a. What was the maximum theoretical exposure time for each area?

The Maximum theoretical exposure time for each measurement ranged from 240-360 for the study spot both without a laptop and with a laptop and fan. It can be seen that the microwave is either used 3 minutes a day (as seen by two of our group members) or not used that often at all (as seen by averaging a minute a day by two other group members)

b. How much time do you estimate you stay in each area at the distance you measured each day?

I cook daily, so staying in the kitchen where the blender and microwave are located is about an hour a day, although the microwave and blender are not always on when I am cooking. My study spot at my house is my desk where I also play video games, so I would estimate I stay around 8 hours a day in my study spot, with about 6 of those hours and 2 hours playing video games. Listening to music at max volume depends on my mood and stress, but I would say I spend around 20 minutes a day listening to music at full volume.

c. What is the percentage of the daily maximum exposure time for each area?

Study space no fan:

Jonah – 0.0004 %, Karsten – 0.002%, Dorsa – 0.0005%, Gabriel – 0.005%

Study space with laptop and fan:

Jonah – 0.3, Karsten – 0.6, Dorsa – 0.3%, Gabriel – 0.6%

Microwave:

Jonah – 0.002, Karsten – 0.002%, Dorsa – 0.0006 %, Gabriel – 0.001%

Blender:

Jonah – 5.5%, Karsten – 1.05%, Dorsa – 0.7%, Gabriel – 8%

Earbuds:

Jonah – 0.4%, Karsten – 0.2%, Dorsa – 0.2%, Gabriel – 1.3%

d. What is the daily noise dose for your measurements

Jonah – 6.206%

Karsten – 1.854%

Dorsa – 1.2011%

Gabriel – 9.906%

e. Does any area pose an immediate threat?

Our earbuds/headphones at maximum value pose an immediate threat.

f. Does the daily noise dose pose a threat?

The daily noise dose does not pose a threat as our hearing is still good and young for our ages, with the hearwho score reflecting that as well.

g. How can we reduce the threat of either immediate noise or the daily dose?

We can opt to use noise cancelling headphones to minimize the habit of turning the volume up while in a loud/busy/crowded area to combat the noise of the crow with the noise of our headphones.