

The instantaneous influence of aquariums on heart rate and potentially on stress

(By: Laurent Dumont/ATL Location)

1/ Motivation :

Studies have already been carried out on the benefits of aquariums but, according to our research, not yet in Belgium nor with placements in situations as varied as rest houses, commercial companies, dentistry, school and dermatological practice. These are unlikely places for this type of study and on unprepared individuals.

The idea is to see what impact the observation of an aquarium in a very short time on heart rate and therefore, potentially, also on stress.

Heart rate is the number of heartbeats (or pulses) per unit of time. There are several conditions that can cause heart rate to increase or decrease. Its measurement is a very important diagnostic tool. (source: Wikipedia)

2/ Protocol:

Participants are encouraged to wear a heart rate sensor for +-2 minutes in locations such as:

- Waiting rooms
- Entrance hall
- Landscaped or other type of offices...



In situations such as:

- Waiting for a medical appointment (CLIDERM, MUTUALIA)
- Waiting for a file processing (MUTUALIA head office)
- Working in front of a computer screen (RINGTWICE, DL CONSULTING, KBC INSURANCE AEVI)
- Relaxing moment (RESIDENCE PALOKE)
- Class Course (ECOLE SAINT-GABRIEL)

KDDENTAL, GENEAL,

Then, they are invited to sit in front of an aquarium protected by a screen for the same time period, that is +-2 minutes.

Heart rate is measured with a HeartMath Inner Balance Coherence Plus device.

At the end of this 2nd session, each participant is asked to communicate his feelings. Whether he feels more relaxed, ditto or less relaxed. All data is transcribed in an Excel table.





3/ Data collected:

- Date of meeting
- Location (name)
- Type of activity (nursing home, company, dental office, dermatology office, medical office, other)
- Location of the aquarium (waiting room, lobby, landscaped office or other)
- Type of interior decoration of the aquarium
- Gender of participant (female, male, child, not gendered)
- Age of participant
- Duration of the 1st session
- Average number of heart beats 1st session
- Duration of the 2nd session
- Average number of heart beats 2nd session
- Feeling relaxed after 2nd session? (yes, no, ditto)



4/ Control group:

A “control group” has been created to ensure the relevance and reliability of the results generated by the heart rate monitor.

11 participants therefore performed 2 sessions in “any” situations and then 1 session in front of the aquarium.

The gross result is as follows:

			GENRE	AGE	DUREE	BPM AVANT	DUREE	BPM APRES	RESSENTI POSITIF	DIFFERENTIEL
09-07-24	CLIDERM	DERMATO	H	72	2	77	2	76	OUI	-1
			CONTRÔLE2		2	77				
09-07-24	CLIDERM	DERMATO	F	61	2	74	2	71	IDEM	-3
			CONTRÔLE2		2	78				
09-07-24	CLIDERM	DERMATO	H	64	2	73	2	70	OUI	-3
			CONTRÔLE2		2	72				
09-07-24	CLIDERM	DERMATO	F	73	2	106	2	105	OUI	-1
			CONTRÔLE2		2	106				
09-07-24	CLIDERM	DERMATO	F	32	2	56	2	70	OUI	14
			CONTRÔLE2		2	71				
09-07-24	CLIDERM	DERMATO	F	66	2	76	2	78	IDEM	2
			CONTRÔLE2		2	76				
07-08-24	PALOKE	MAISON DE REPOS	H	37	2	91	2	81	OUI	-10
			CONTRÔLE2		2	92				
07-08-24	PALOKE	MAISON DE REPOS	F	48	2	59	2	50	OUI	-9
			CONTRÔLE2		2	62				
08-08-24	MUTUALIA	MUTUELLE Siège	F	28	2	69	2	57	OUI	-12
			CONTRÔLE2		2	70				
04-09-24	MUTUELLE	AGENCE BASILIQUE	F	46	2	77	2	70	IDEM	-7
			CONTRÔLE2		2	76				
04-09-24	MUTUELLE	AGENCE BASILIQUE	F	30	2	72	2	63	OUI	-9
			CONTRÔLE2		2	67				

5/ Interpretation of results:

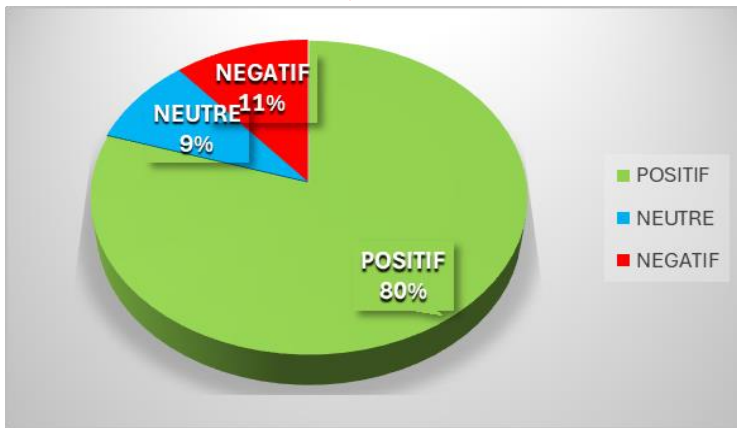
(BY DEFAULT: **positive**=decrease in heart rate, **neutral**= same heart rate, **negative**=increase in heart rate)

a) GENERAL Results:

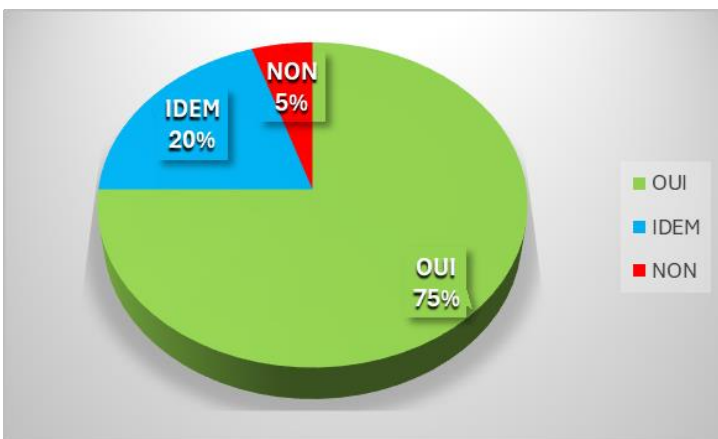
- Age group of all participants: 10 to 96 years
- Total number of participants: 105

- Highest POSITIVE heart rate variability = -27
- Smallest POSITIVE heart rate variability = -1
- Highest NEGATIVE heart rate variability = 28
- Smallest NEGATIVE heart rate variability = 1

- % of **TOTAL POSITIVE** results, **DECREASED** heart rate after the 2nd session = **80%**
- % of **TOTAL NEUTRAL** results, **IDENTICAL** heart rate after the 2nd session = **9%**
- % of **TOTAL NEGATIVE** results, **INCREASED** heart rate after the 2nd session = **11%**



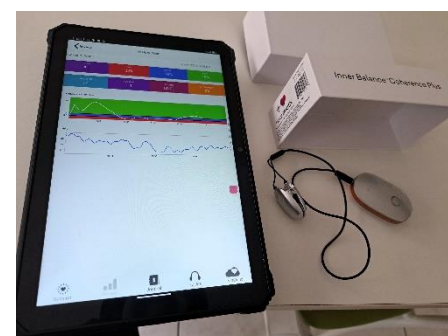
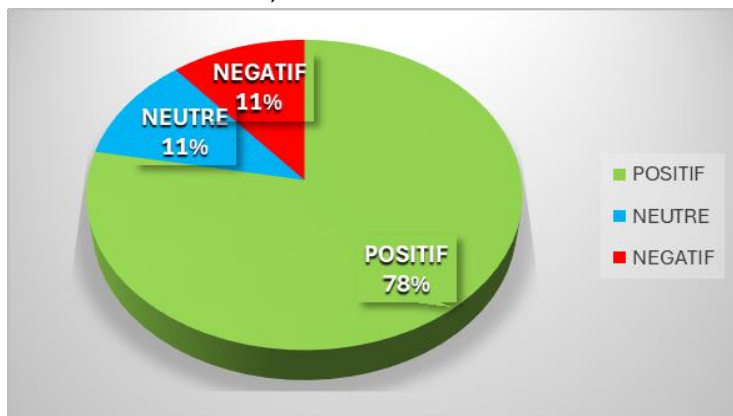
- Feeling of relaxation after 2nd session: % of **YES** = **75%** (79 individuals)
- Feeling of relaxation after 2nd session: % of **IDEM** = **20%** (21 individuals)
- Feeling of relaxation after 2nd session: % of **NO** = **5%** (5 individuals)



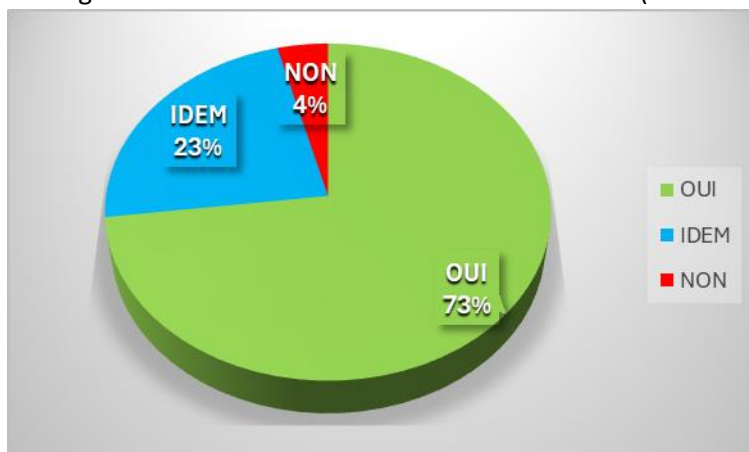
b) Results by GENDER:

1° Women:

- Age range: 23 to 96
- Number of women: 53
- Highest POSITIVE heart rate variability = -27
- Smallest POSITIVE heart rate variability = -1
- Highest NEGATIVE heart rate variability = 28
- Smallest NEGATIVE heart rate variability = 1
- % of POSITIVE results, DECREASED heart rate after the 2nd session = 78%
- % NEUTRAL results, IDENTICAL heart rate after the 2nd session = 11%
- % of NEGATIVE results, INCREASED heart rate after the 2nd session = 11%

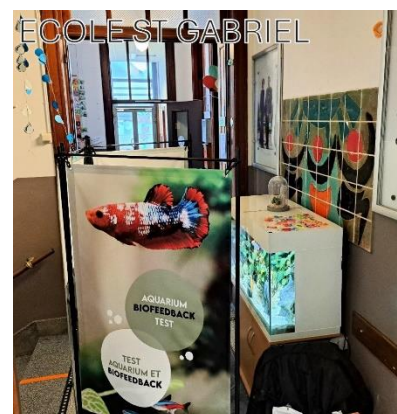
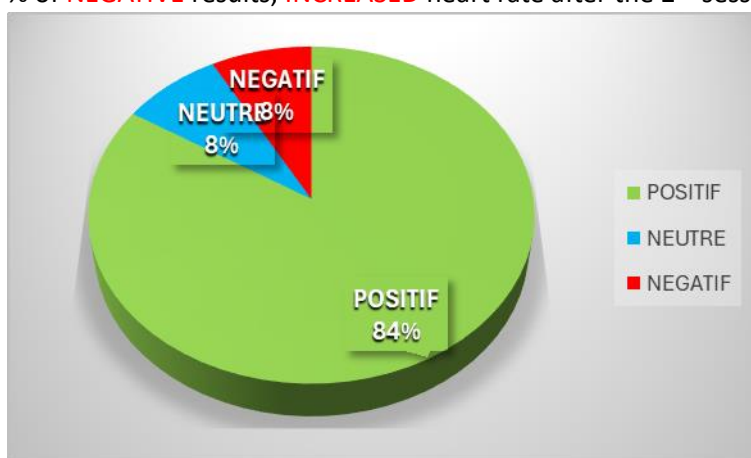


- Feeling of relaxation after 2nd session: % of YES = 73% (39 individuals)
- Feeling of relaxation after 2nd session: % of IDEM = 23% (12 individuals)
- Feeling of relaxation after 2nd session: % of NO = 4% (2 individuals)

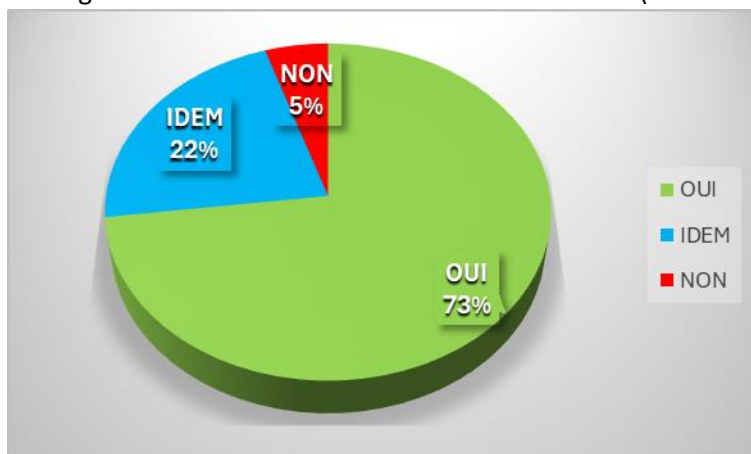


2° Men:

- Age range: 22 to 90
- Number of participants: 37
- Highest POSITIVE heart rate variability = -14
- Smallest POSITIVE heart rate variability = -1
- Highest NEGATIVE heart rate variability = 9
- Smallest NEGATIVE heart rate variability = 1
- % of POSITIVE results, DECREASED heart rate after the 2nd session = 84%
- % of NEUTRAL results, IDENTICAL heart rate after the 2nd session = 8%
- % of NEGATIVE results, INCREASED heart rate after the 2nd session = 8%

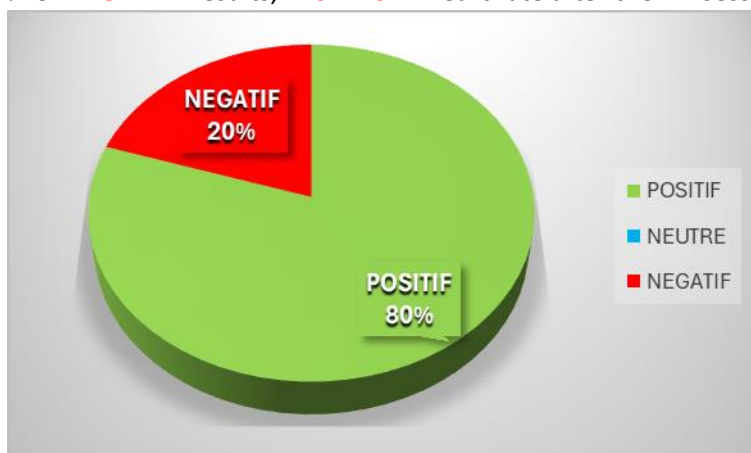


- Feeling of relaxation after 2nd session: % of YES = 73% (27 individuals)
- Feeling of relaxation after 2nd session: % of IDEM = 22% (8 individuals)
- Feeling of relaxation after 2nd session: % of NO = 5% (2 individuals)

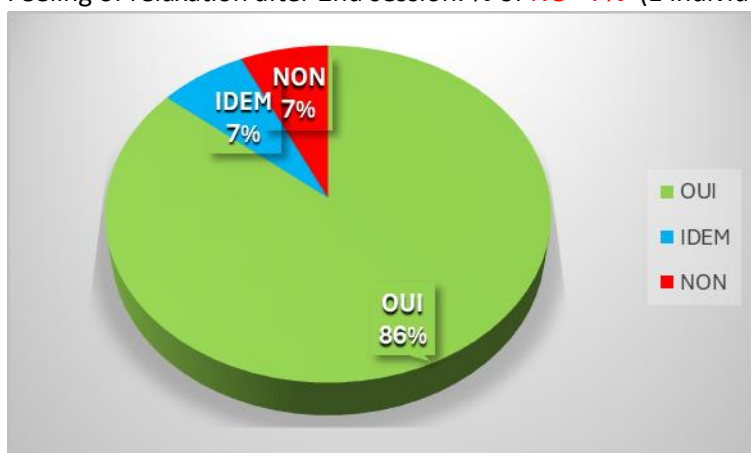


3° Children:

- Age range: 10 to 17
- Number of participants: 15
- Highest POSITIVE heart rate variability = -21
- Smallest POSITIVE heart rate variability = -6
- Highest NEGATIVE heart rate variability = 25
- Smallest NEGATIVE heart rate variability = 3
- % of POSITIVE results, DECREASED heart rate after the 2nd session = 80%
- % of NEUTRAL results, IDENTICAL heart rate after the 2nd session = 0%
- % of NEGATIVE results, INCREASED heart rate after the 2nd session = 20%



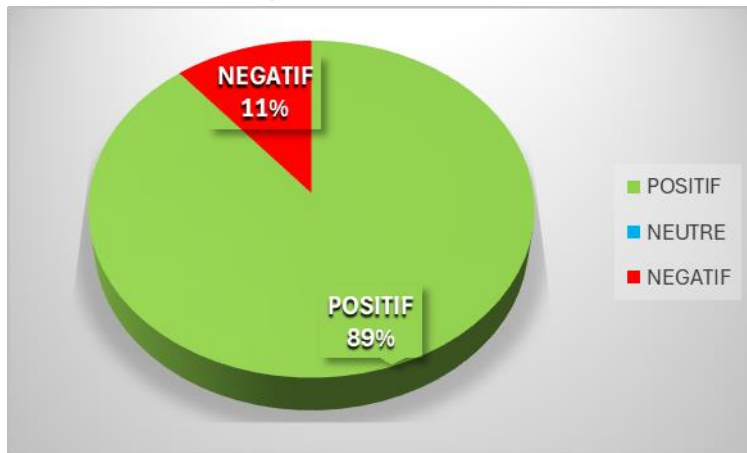
- Feeling of relaxation after 2nd session: % of YES = 86% (13 individuals)
- Feeling of relaxation after 2nd session: % of IDEM = 7% (1 individuals)
- Feeling of relaxation after 2nd session: % of NO = 7% (1 individuals)



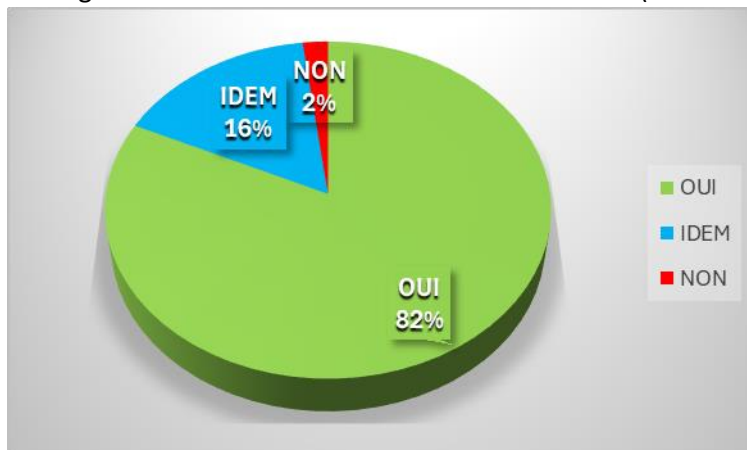
c) Results by AGE GROUP:

1° Age range: from 1 to 33

- Number of participants: 38 (36%)
- Highest POSITIVE heart rate variability = -27
- Smallest POSITIVE heart rate variability = -1
- Highest NEGATIVE heart rate variability = 25
- Smallest NEGATIVE heart rate variability = 3
- % of POSITIVE results, DECREASED heart rate after the 2nd session = 89%
- % of NEUTRAL results, IDENTICAL heart rate after the 2nd session = 0%
- % of NEGATIVE results, INCREASED heart rate after the 2nd session = 11%



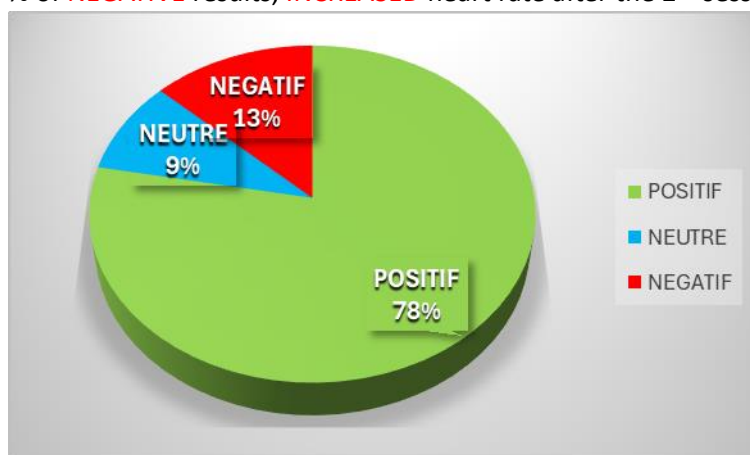
- Feeling of relaxation after 2nd session: % of YES = 82% (31 individuals)
- Feeling of relaxation after 2nd session: % of IDEM = 16% (6 individuals)
- Feeling of relaxation after 2nd session: % of NO = 2% (1 individuals)



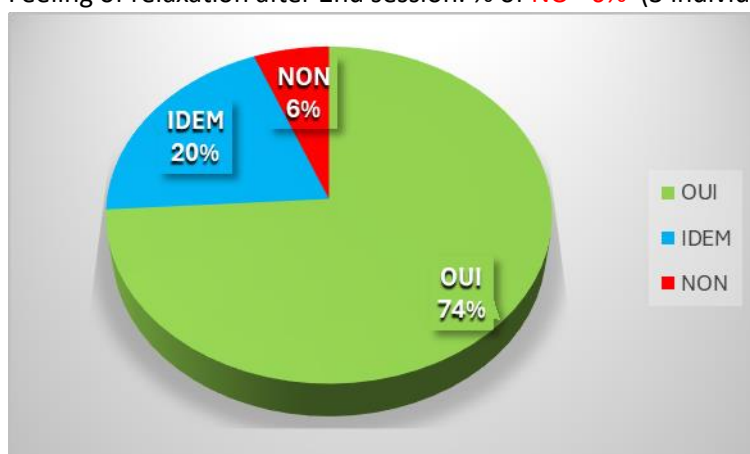
2° Age range: 34 to 66



- Number of participants: 46 (44%)
- Highest POSITIVE heart rate variability = -11
- Smallest POSITIVE heart rate variability = -1
- Highest NEGATIVE heart rate variability = 28
- SMALLEST NEGATIVE heart rate variability = 1
- % of POSITIVE results, DECREASED heart rate after the 2nd session = 78%
- % of NEUTRAL results, IDENTICAL heart rate after the 2nd session = 9%
- % of NEGATIVE results, INCREASED heart rate after the 2nd session = 13%



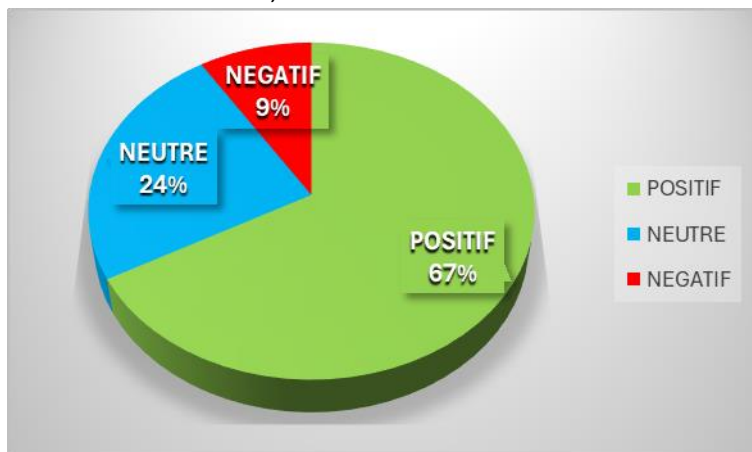
- Feeling of relaxation after 2nd session: % of YES = 74% (34 individuals)
- Feeling of relaxation after 2nd session: % of IDEM = 20% (9 individuals)
- Feeling of relaxation after 2nd session: % of NO = 6% (3 individuals)



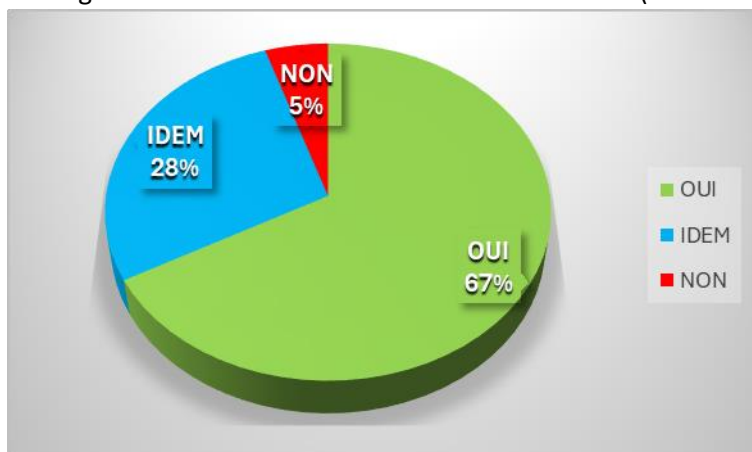


3° Age range: 67 to 100

- Number of participants: 21 (20%)
- Highest POSITIVE heart rate variability = -8
- Smallest POSITIVE heart rate variability = -1
- Highest NEGATIVE heart rate variability = 2
- Smallest NEGATIVE heart rate variability = 1
- % of POSITIVE results, DECREASED heart rate after the 2nd session = 67%
- % of NEUTRAL results, IDENTICAL heart rate after the 2nd session = 24%
- % of NEGATIVE results, INCREASED heart rate after the 2nd session = 9%



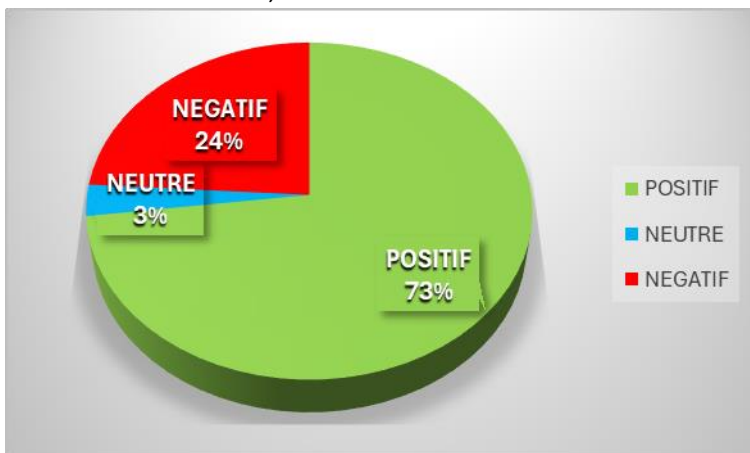
- Feeling of relaxation after 2nd session: % of YES = 67% (14 individuals)
- Feeling of relaxation after 2nd session: % of IDEM = 28% (6 individuals)
- Feeling of relaxation after 2nd session: % of NO = 5% (1 individuals)



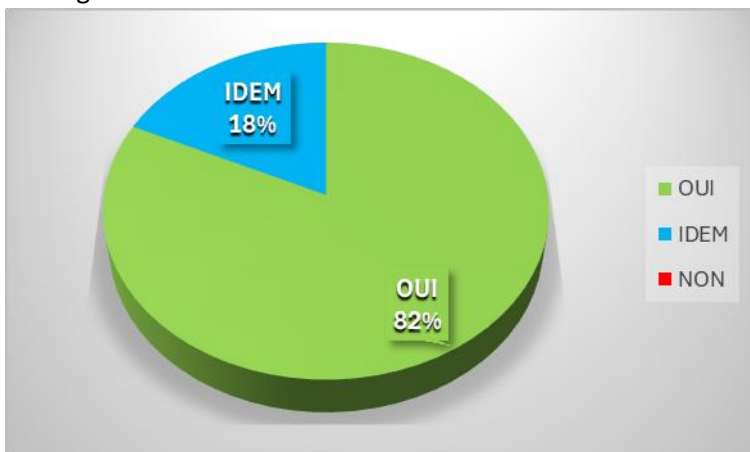
Results by PLACES:

1° Medical waiting rooms (33 sessions):

- % of **POSITIVE** results, **DECREASED** heart rate after the 2nd session = **73%**
- % of **NEUTRAL** results, **IDENTICAL** heart rate after the 2nd session = **3%**
- % of **NEGATIVE** results, **INCREASED** heart rate after the 2nd session = **24%**

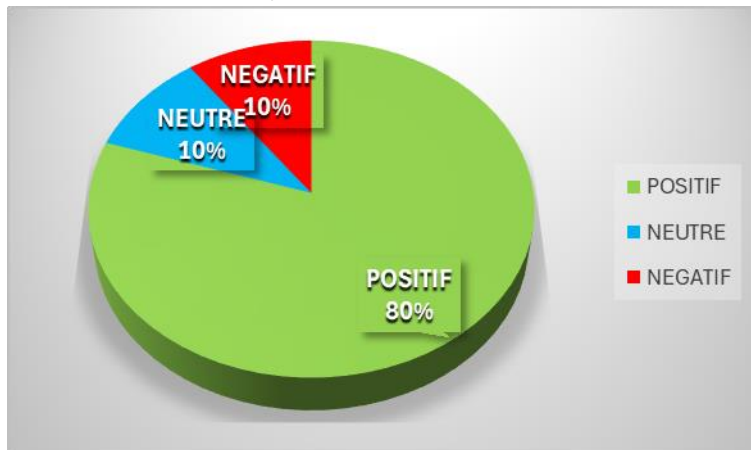


- Feeling of relaxation after 2nd session: % of **YES** = **82%** (27 individuals)
- Feeling of relaxation after 2nd session: % of **IDEM** = **18%** (6 individuals)
- Feeling of relaxation after 2nd session: % of **NO** = **0%**

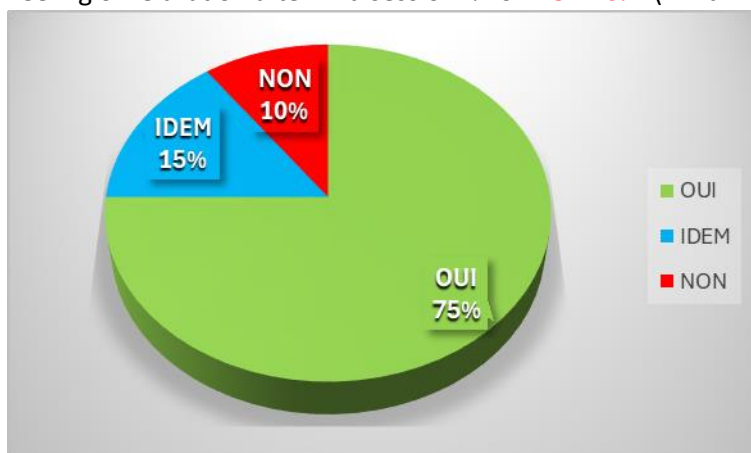


2° Diverse waiting room (20 sessions):

- % of **POSITIVE** results, **DECREASED** heart rate after the 2nd session = **80%**
- % of **NEUTRAL** results, **IDENTICAL** heart rate after the 2nd session = **10%**
- % of **NEGATIVE** results, **INCREASED** heart rate after the 2nd session = **10%**

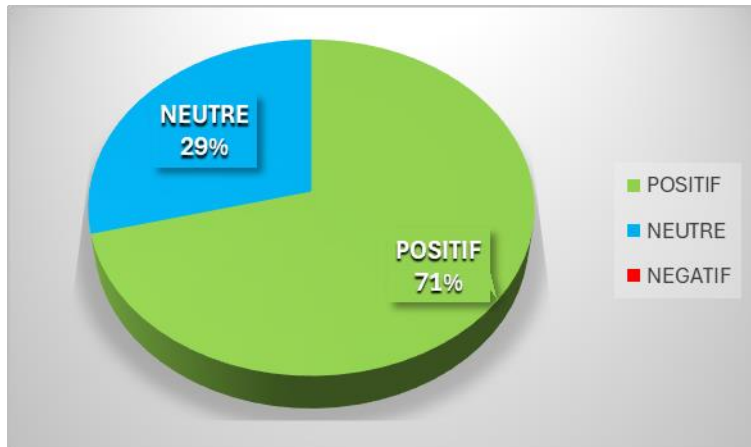


- Feeling of relaxation after 2nd session: % of **YES** = **75%** (15 individuals)
- Feeling of relaxation after 2nd session: % of **IDEM** = **15%** (3 individuals)
- Feeling of relaxation after 2nd session: % of **NO** = **10%** (2 individuals)

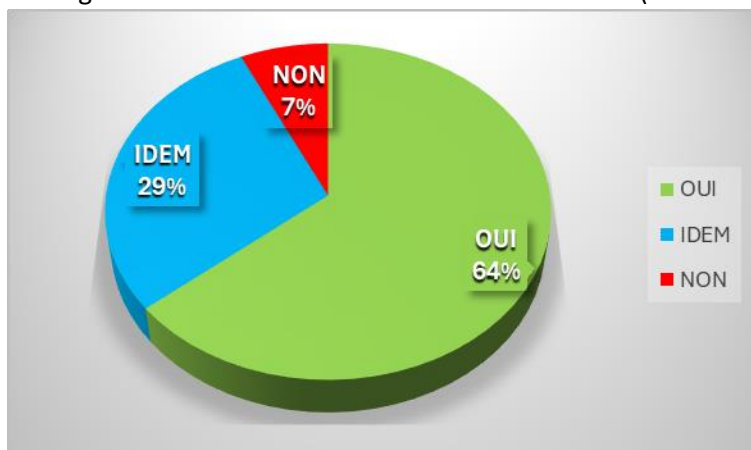


3° Rest Home (14 sessions):

- % of **POSITIVE** results, **DECREASED** heart rate after the 2nd session = **71%**
- % of **NEUTRAL** results, **IDENTICAL** heart rate after the 2nd session = **29%**
- % of **NEGATIVE** results, **INCREASED** heart rate after the 2nd session = **0%**

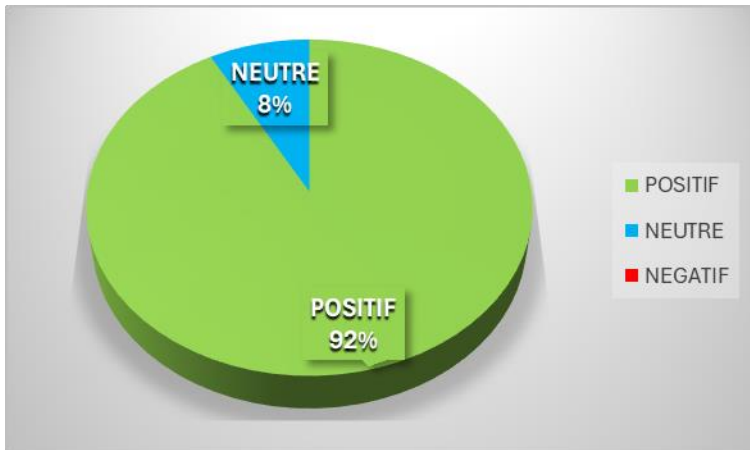


- Feeling of relaxation after 2nd session: % of **YES** = **64%** (9 individuals)
- Feeling of relaxation after 2nd session: % of **IDEM** = **29%** (4 individuals)
- Feeling of relaxation after 2nd session: % of **NO** = **7%** (1 individual)

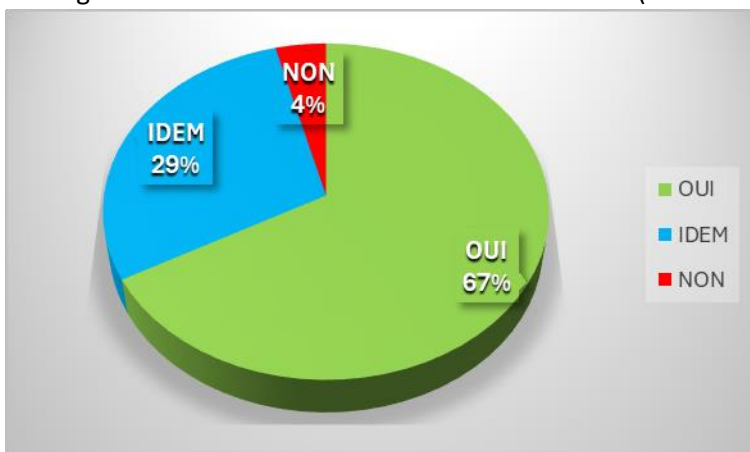


4° Commercial Companies – Landscaped Offices (24 sessions):

- % of **POSITIVE** results, **DECREASED** heart rate after the 2nd session = **92%**
- % of **NEUTRAL** results, **IDENTICAL** heart rate after the 2nd session = **8%**
- % of **NEGATIVE** results, **INCREASED** heart rate after the 2nd session = **0%**

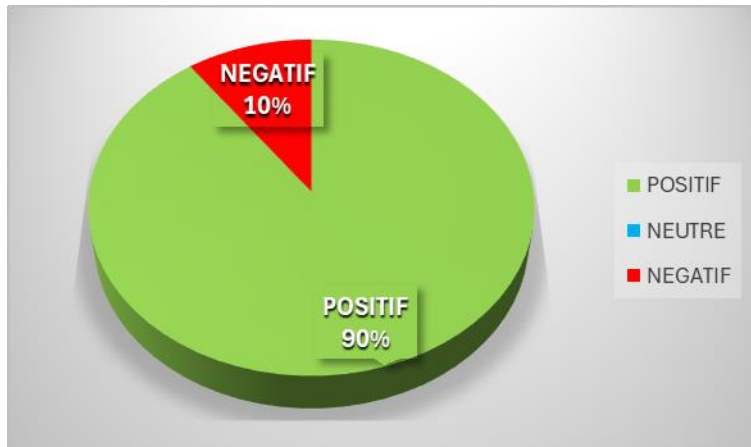


- Feeling of relaxation after 2nd session: % of **YES** = **67%** (16 individuals)
- Feeling of relaxation after 2nd session: % of **IDEM** = **29%** (7 individuals)
- Feeling of relaxation after 2nd session: % of **NO** = **4%** (1 individual)

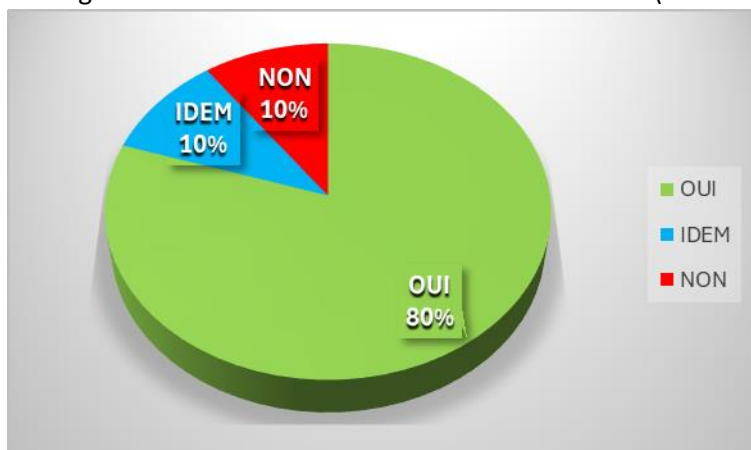


5° School (10 sessions) :

- % of **POSITIVE** results, **DECREASED** heart rate after the 2nd session = **90%**
- % of **NEUTRAL** results, **IDENTICAL** heart rate after the 2nd session = **0%**
- % of **NEGATIVE** results, **INCREASED** heart rate after the 2nd session = **10%**

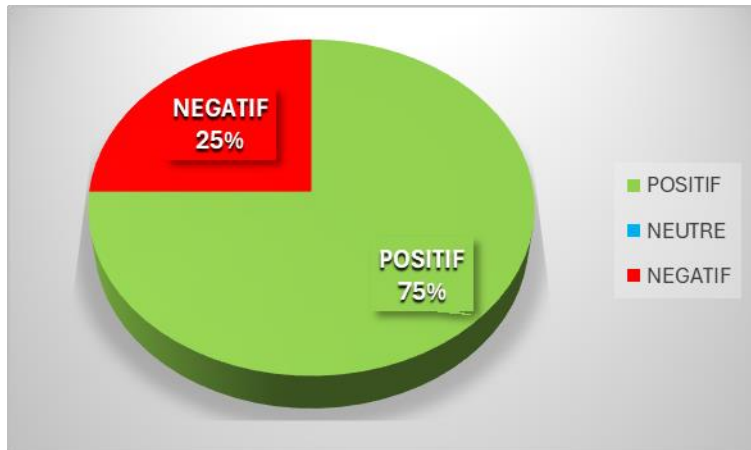


- Feeling of relaxation after 2nd session: % of **YES** = **80%** (8 individuals)
- Feeling of relaxation after 2nd session: % of **IDEM** = **10%** (1 individual)
- Feeling of relaxation after 2nd session: % of **NO** = **10%** (1 individual)

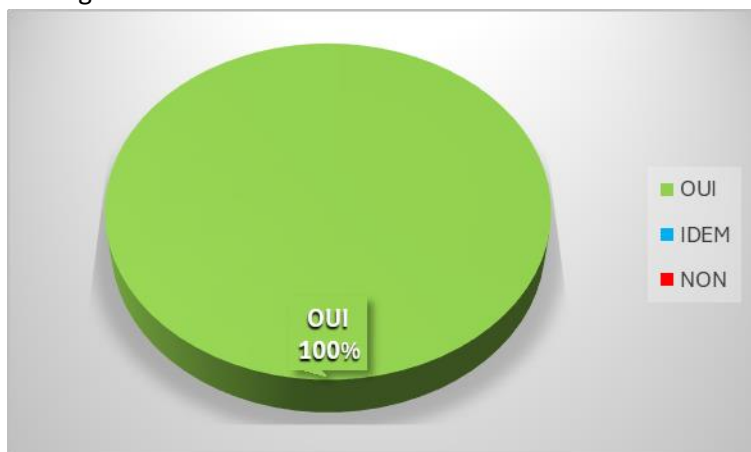


6° Private (4 sessions):

- % of **POSITIVE** results, **DECREASED** heart rate after the 2nd session = **75%**
- % of **NEUTRAL** results, **IDENTICAL** heart rate after the 2nd session = **0%**
- % of **NEGATIVE** results, **INCREASED** heart rate after the 2nd session = **25%**



- Feeling of relaxation after 2nd session: % of **YES** = **100%** (4 individuals)
- Feeling of relaxation after 2nd session: % of **IDEM** = **0%**
- Feeling of relaxation after 2nd session: % of **NO** = **0%**



6/ Location of observations:

<https://www.cliderm.be/>

<https://www.kddental.be/>

<https://www.mutualia.be/Contact/Agences-Listing/Agences-Liste/Bruxelles/Symbio-Koekelberg.aspx>

<https://www.mutualia.be/Contact/Agences-Listing/Agences-Liste/Bruxelles/Woluwe-Saint-Lambert-Brand-Whitlock.aspx>

<https://dlconsulting.be/>

<https://aevi-insurance.be/>

https://www.korian.be/fr/maisons-de-repos-et-de-soins/kor/45-residentie-paloke?cpnb_method=cpnbCookiesManagerSaveSettings

<http://www.saintgabriel.be/>

7/ Personal considerations:

Without doubt that a break accompanied by the observation of photos (or films) of landscapes, the observation of a pretty plant or a beautiful maneki-neko can create in each of us an unconscious feeling of relaxation and well-being; It is clear that the aquatic environment and aquariums in particular have a relaxing power.

This observation campaign, through the biometric and cognitive results but also by the enthusiasm encountered in almost all people (only 2 test refusals) to participate in it demonstrates.

In almost every situation there was a kind of federation around the project and the observed aquariums. Even more (pleasantly) surprising finding; The whole environment around each session was animated and generated conversations and anecdotes between people who sometimes did not even know each other. Surprising in our society where the withdrawal is more and more omnipresent...

I think that aquariums and more generally aquatic environments and other elements related to WATER (of which we are still composed of +- 60%!) speak to us at the deepest level of our body and our «soul» and unconsciously generate a desire for «back to the sources» of our humanity.

Hence the importance of finding water on Mars ...



8/ Thanks:

Thanks to Dr. Pierre Vereecken (Dermatologist/CLIDERM), Dr. Ali Khamaktchian (KD DENTAL/BOIC/European Oral Implant Center/...), Dr. Orban, Mutuelles Mutualia and its staff and affiliates, Jérémy and his team and students from the St Gabriel school, the management of Paloke Residence and its residents, the directors and staff of DL Consulting - KBC Insurance AEVI - Ringtwice and Véronique Forgeur of the association Run For Hope.

Without them, none of this would have been possible.

I admire them for their vision of the well-being of each individual and that makes them exceptional people.

9/ To go further... Question Chatgpt:

Y a t'il déjà eu des études et campagnes d'observation BELGES en BELGIQUE sur les bienfaits des aquariums? Si oui, lesquelles ?



À ma connaissance, il n'existe pas d'études ou de campagnes d'observation spécifiques menées en Belgique exclusivement sur les bienfaits des aquariums. Cependant, des études générales sur les effets positifs des aquariums ont été réalisées dans d'autres pays, et les résultats peuvent être applicables à la Belgique.

Études internationales pertinentes :

- **Réduction du stress et de l'anxiété** : Plusieurs études, notamment en psychologie et en santé publique, ont démontré que la présence d'un aquarium dans un environnement peut réduire le stress et l'anxiété. Une étude de l'Université de Plymouth (Royaume-Uni) a montré que l'observation des poissons dans un aquarium avait un effet calmant mesurable sur le rythme cardiaque et la tension artérielle.
- **Amélioration du bien-être mental** : Les aquariums sont également souvent utilisés dans les maisons de retraite, les hôpitaux ou d'autres institutions de soins de santé pour aider à améliorer le bien-être des patients, particulièrement ceux souffrant de démence ou de troubles cognitifs. Cela pourrait être pertinent pour des projets similaires en Belgique, même si aucune étude propre à la Belgique n'est citée.

Campagnes en Belgique

Bien qu'il n'existe pas d'étude proprement belge connue, certaines initiatives locales, comme des **aquariums publics** (ex : Aquatopia à Anvers ou l'Aquarium de Liège), mettent en avant les bienfaits pédagogiques, écologiques et psychologiques des aquariums.

Il serait possible que des institutions belges, comme des universités ou des centres de recherche en santé mentale ou en environnement, aient pu participer à des projets internationaux ou conduire des recherches connexes, mais il semble qu'aucune campagne d'envergure spécifiquement belge n'ait été lancée jusqu'à présent.

Si vous recherchez des informations spécifiques, cela pourrait nécessiter une recherche plus poussée dans des bases de données académiques belges ou européennes.

🔊 📄 👍 🗨️ ↻

🗨️ Message ChatGPT



ChatGPT peut faire des erreurs. Envisagez de vérifier les informations importantes.