SUPPLEMENTARIES

An EACVI Survey Assessing the Awareness of Cardiovascular Imaging's Environmental Impact Among Cardiovascular Imagers

Table of contents

Table S1 – Distribution of participants across the world

Continent/Country	Count	Percentage
Africa	**3**	**1**
Algeria	1	0.5
Angola	1	0.5
Morocco	1	0.5
America	**8**	**4**
United States of America	5	2.3
Argentina	1	0.5
Brazil	1	0.5
Mexico	1	0.5
Asia	**23**	**11**
Japan	12	5.5
Turkey	4	1.8
Armenia	1	0.5
Cyprus	1	0.5
Georgia	1	0.5
India	1	0.5
Iran (Islamic Republic of)	1	0.5
Iraq	1	0.5
United Arab Emirates	1	0.5
Europe	**183**	**84**
Belgium	40	18.3
Netherlands (The)	25	11.4
Italy	19	8.7
France	16	7.3
United Kingdom of Great Britain and Northern Ireland	12	5.5
Germany	9	4.1
Poland	9	4.1
Spain	7	3.2
Switzerland	7	3.2
Greece	6	2.7
Bulgaria	5	2.3
Portugal	5	2.3
Slovenia	4	1.8
Romania	3	1.4
Sweden	3	1.4
Croatia	2	0.9
North Macedonia	2	0.9
Serbia	2	0.9
Ukraine	2	0.9
Albania	1	0.5
Austria	1	0.5
Bosnia and Herzegovina	1	0.5
Finland	1	0.5
Lithuania	1	0.5
NA		
NA	2	0.9

Table S2 – Identification of the population and background in ecology (N=218)

		Levels of environmental consciousness in your daily life[2]			
Question	**Overall** N=218[1]	**Low** N=26[1]	**Moderate** N=142[1]	**High** N=50[1]	**p-value**
Age, categories					0.8
30-39 years	78 (36)	11 (42)	52 (37)	15 (30)	
40-49 years	78 (36)	11 (42)	48 (34)	19 (38)	
50-59 years	34 (16)	3 (12)	21 (15)	10 (20)	
Above 60 years	18 (8.3)	0 (0)	14 (9.9)	4 (8.0)	
Under 30 years	10 (4.6)	1 (3.8)	7 (4.9)	2 (4.0)	
Gender					0.7
Female	111 (51)	11 (42)	75 (53)	25 (50)	
Male	105 (48)	15 (58)	66 (46)	24 (48)	
Non-binary	2 (0.9)	0 (0)	1 (0.7)	1 (2.0)	
Background					0.1
Cardiologist specialist in CVI	160 (73)	22 (85)	109 (77)	29 (58)	
Cardiologist from other sector	39 (18)	4 (15)	23 (16)	12 (24)	
Sonographer	7 (3)	0 (0)	5 (4)	2 (4)	
Radiologist	6 (3)	0 (0)	2 (1)	4 (8)	
Others (including biomedical engineers, healthcare scientists)	6 (3)	0 (0)	3 (2)	3 (6)	
Years of practice	1				0.1
11-20 years	57 (26)	8 (31)	38 (27)	11 (22)	
5-10 years	67 (31)	12 (46)	39 (27)	16 (32)	
Less than 5 years	47 (22)	4 (15)	35 (25)	8 (16)	
More than 20 years	43 (20)	1 (3.8)	27 (19)	15 (30)	
Not working in the field of cardiovascular imaging	4 (1.8)	1 (3.8)	3 (2.1)	0 (0)	
University or post-university education include information on the climate crisis or training in sustainable healthcare practices, yes	23 (11)	2 (7.7)	11 (7.7)	10 (20)	**0.046**
What role do you think healthcare professionals should play in addressing the impacts of climate change on health?					**0.011**
No role	1 (0.5)	1 (3.8)	0 (0)	0 (0)	
Minor role	21 (9.6)	3 (12)	13 (9.2)	5 (10)	
Moderate role	85 (39)	14 (54)	59 (42)	12 (24)	
Significant role	111 (51)	8 (31)	70 (49)	33 (66)	
Have you encountered patients whose					0.2

Question	Overall N=218[1]	Levels of environmental consciousness in your daily life[2] Low N=26[1]	Moderate N=142[1]	High N=50[1]	p-value
cardiovascular health may have been impacted by climate-related factors (e.g., heatwaves)?					
No, not yet	88 (41)	13 (50)	62 (44)	13 (27)	
Yes, occasionally	88 (41)	11 (42)	53 (37)	24 (50)	
Yes, frequently	19 (8.8)	2 (7.7)	13 (9.2)	4 (8.3)	
I do not know	21 (9.7)	0 (0)	14 (9.9)	7 (15)	
How important is the environmental impact of imaging tests in your clinical decision-making?					0.069
Not at all important	44 (20)	8 (32)	26 (18)	10 (20)	
Not very important	85 (39)	10 (40)	60 (42)	15 (31)	
Somewhat important	63 (29)	5 (20)	45 (32)	13 (27)	
Very important	24 (11)	2 (8.0)	11 (7.7)	11 (22)	

[1]n (%)

[2]Low – 'I rarely consider environmental impact in my daily decisions"; Moderate – 'I sometimes consider environmental impact and make eco-friendly choices when convenient"; "High - Environmental considerations actively guide many of my daily decisions and habits"

Caption: Baseline characteristics of respondents according to levels of environmental consciousness in daily life (N = 218).

Table S3 – Awareness of climate change and cardiovascular environmental impact

Question	Overall N = 218[1]	Levels of environmental consciousness in your daily life[2] Low N = 26[1]	Moderate N = 142[1]	High N = 50[1]	p-value
What is the primary cause of climate change?					0.3
Greenhouse gas emissions from human activities **(True answer)**	175 (80)	20 (77)	111 (78)	44 (88)	
Natural climate variability	11 (5.0)	2 (7.7)	7 (4.9)	2 (4.0)	
Ozone layer depletion	23 (11)	2 (7.7)	19 (13)	2 (4.0)	
Solar radiation changes	1 (0.5)	0 (0)	0 (0)	1 (2.0)	
I do not know	8 (3.7)	2 (7.7)	5 (3.5)	1 (2.0)	
What is the main goal of the Paris Agreement on global warming, adopted at COP21 in Paris on December 12, 2015?					**0.021**
To eliminate all greenhouse gas emissions by 2050	35 (16)	3 (12)	25 (18)	7 (14)	
To increase renewable energy usage by 50%	7 (3.2)	0 (0)	4 (2.8)	3 (6.0)	
To limit global warming to well below 2°C above pre-industrial levels (**True answer)**	127 (59)	10 (40)	83 (58)	34 (68)	
I do not know	48 (22)	12 (48)	30 (21)	6 (12)	
According to the IPCC, Lancet Countdown, and World Health Organisation (WHO), which field of health is most immediately and directly impacted by climate change?					0.5
Cardiovascular diseases due to heat stress and air pollution (**True answer**)	85 (39)	12 (46)	51 (36)	22 (44)	
Infectious diseases driven by changes in vector habitats and waterborne pathogens	30 (14)	2 (7.7)	23 (16)	5 (10)	
Mental health disorders caused by climate-related stress and displacement	4 (1.8)	0 (0)	4 (2.8)	0 (0)	
Respiratory diseases from worsening air quality and wildfires	46 (21)	3 (12)	32 (23)	11 (22)	
I do not know	53 (24)	9 (35)	32 (23)	12 (24)	
What proportion of greenhouse gas emissions (GHG) is attributable to the healthcare sector in industrialised countries?					0.8
0.1-0.2% of GHG emissions, with 1% of the total GHG attributable to medical imaging	14 (6.4)	1 (3.8)	10 (7.0)	3 (6.0)	

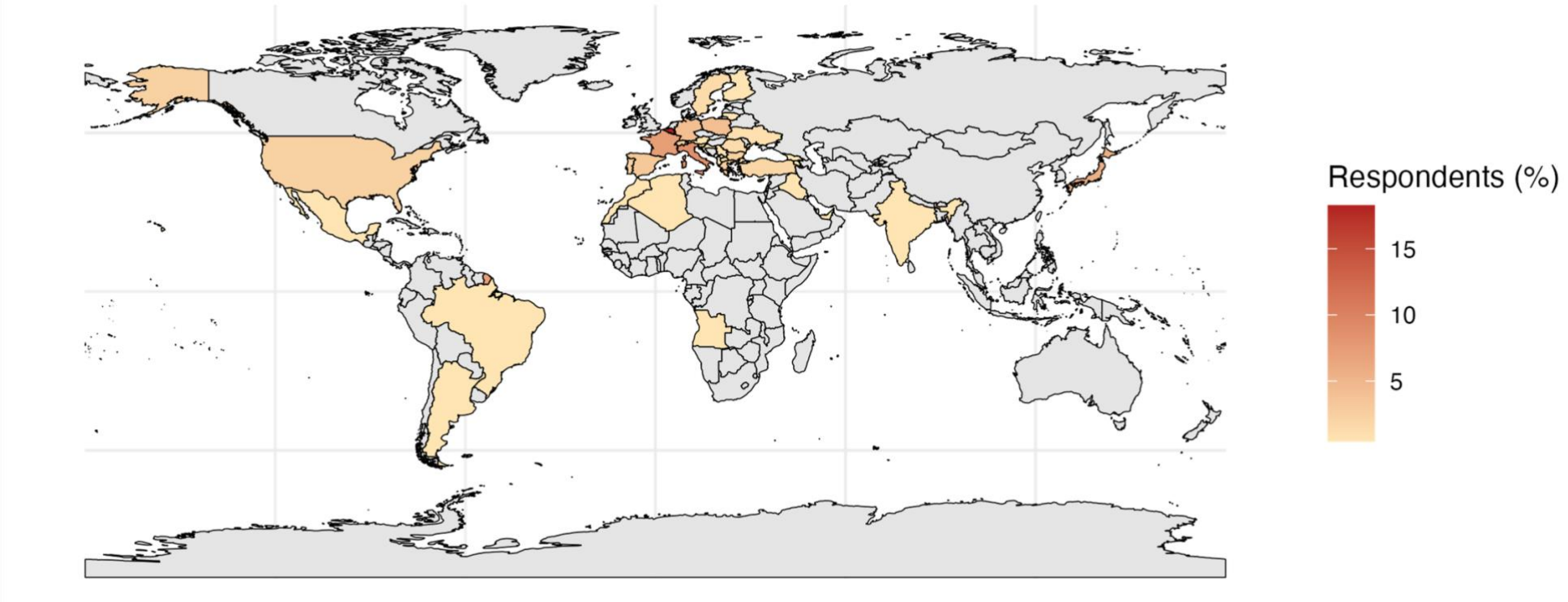
Question	Overall N = 218[1]	Low N = 26[1]	Moderate N = 142[1]	High N = 50[1]	p-value
		Levels of environmental consciousness in your daily life[2]			
4-10% of GHG emissions, with 1% of the total GHG attributable to medical imaging (**True answer**)	45 (21)	5 (19)	32 (23)	8 (16)	
4-10% of GHG emissions, with 10% of the total GHG attributable to medical imaging	44 (20)	4 (15)	27 (19)	13 (26)	
40-50% of GHG emissions, with 10% of the total GHG attributable to medical imaging	4 (1.8)	0 (0)	2 (1.4)	2 (4.0)	
I do not know	111 (51)	16 (62)	71 (50)	24 (48)	
What is the strongest predictor of the environmental impact of an imaging test?					0.7
Energy consumption **(True answer)**	159 (73)	17 (65)	105 (74)	37 (76)	
Plastic use	6 (2.8)	0 (0)	4 (2.8)	2 (4.1)	
Scanner size	7 (3.2)	0 (0)	6 (4.2)	1 (2.0)	
Water waste	12 (5.5)	2 (7.7)	7 (4.9)	3 (6.1)	
I do not know	33 (15)	7 (27)	20 (14)	6 (12)	
Rank the following imaging technologies based on their carbon footprint (per imaging test), from highest to lowest					0.9
CMR (highest) > PET> SPECT > Echo > CT (lowest)	30 (14)	4 (15)	19 (13)	7 (14)	
CT (highest)> CMR > Echo> PET> SPECT (lowest)	11 (5.0)	2 (7.7)	6 (4.2)	3 (6.0)	
PET (highest) > CMR > SPECT > CT > Echo (lowest) **(True answer)**	147 (67)	15 (58)	100 (70)	32 (64)	
SPECT (highest) > Echo > CMR>SPECT> PET (lowest)	1 (0.5)	0 (0)	1 (0.7)	0 (0)	
I do not know	29 (13)	5 (19)	16 (11)	8 (16)	
Which characteristic of MRI contrast agents poses the greatest environmental concern?					0.1
Their ability to react with disinfectants in wastewater, forming toxic byproducts	11 (5.0)	3 (12)	6 (4.2)	2 (4.0)	
Their contribution to air pollution due to emissions after patient exhalation	7 (3.2)	0 (0)	4 (2.8)	3 (6.0)	
Their persistence in water and potential bioaccumulation in aquatic ecosystems **(True answer)**	111 (51)	8 (31)	73 (51)	30 (60)	
Their rapid degradation, leading to heavy metal release in the soil	15 (6.9)	4 (15)	10 (7.0)	1 (2.0)	
I do not know	74 (34)	11 (42)	49 (35)	14 (28)	

[1]n (%)

[2]Low – 'I rarely consider environmental impact in my daily decisions"; Moderate – 'I sometimes consider environmental impact and make eco-friendly choices when

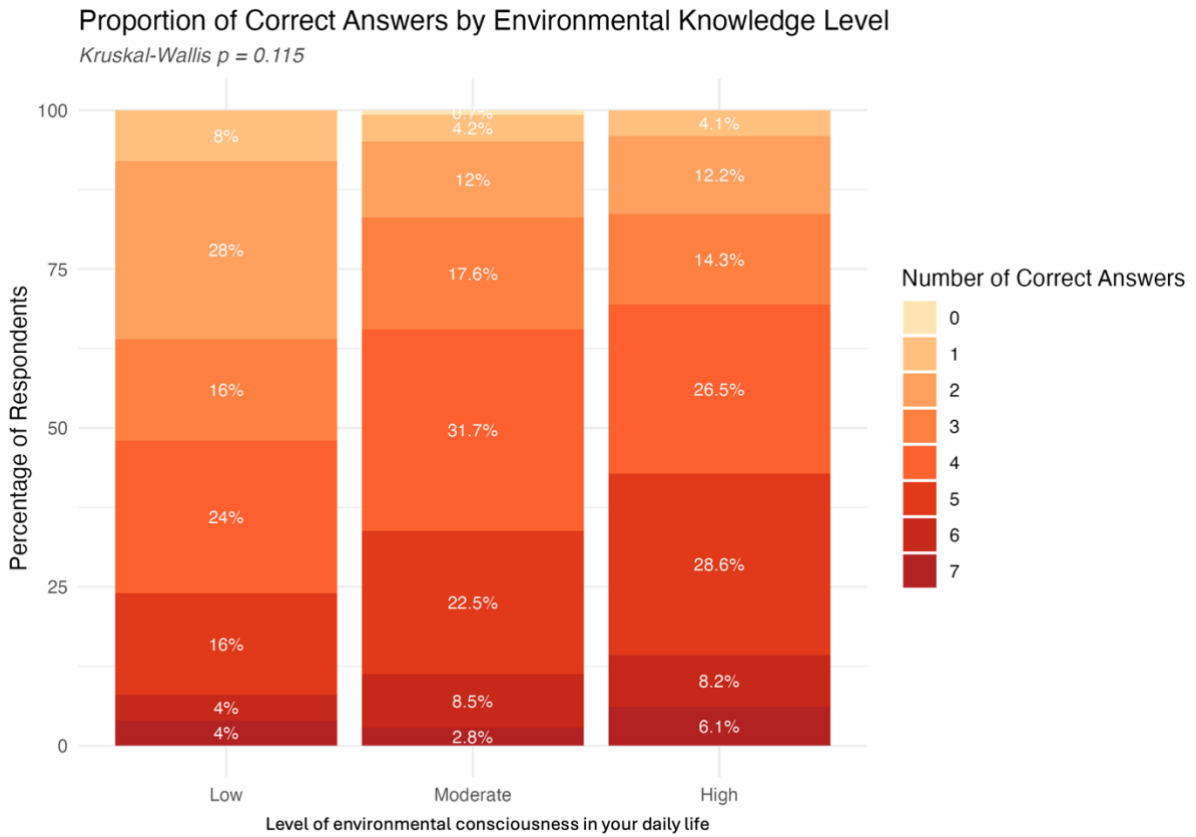
Question	Overall N = 218[1]	Low N = 26[1]	Moderate N = 142[1]	High N = 50[1]	p-value
			Levels of environmental consciousness in your daily life[2]		
convenient"; "High - Environmental considerations actively guide many of my daily decisions and habits"					

Figure S1 – Location of participants



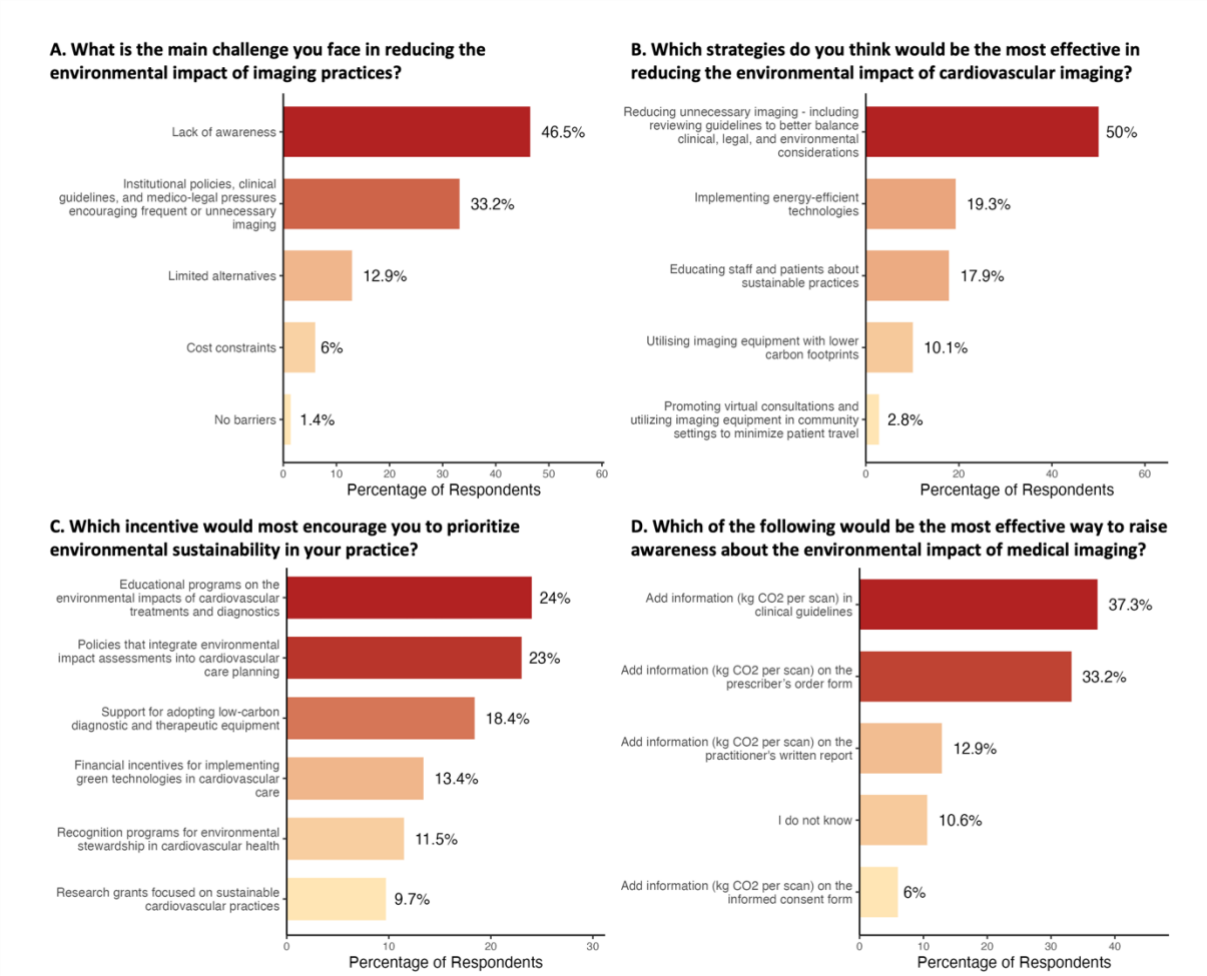
Caption: World map showing the geographic distribution of survey participants. Countries are represented in a heatmap according to the percentage of total respondents.

Figure S2 - Knowledge by consciousness



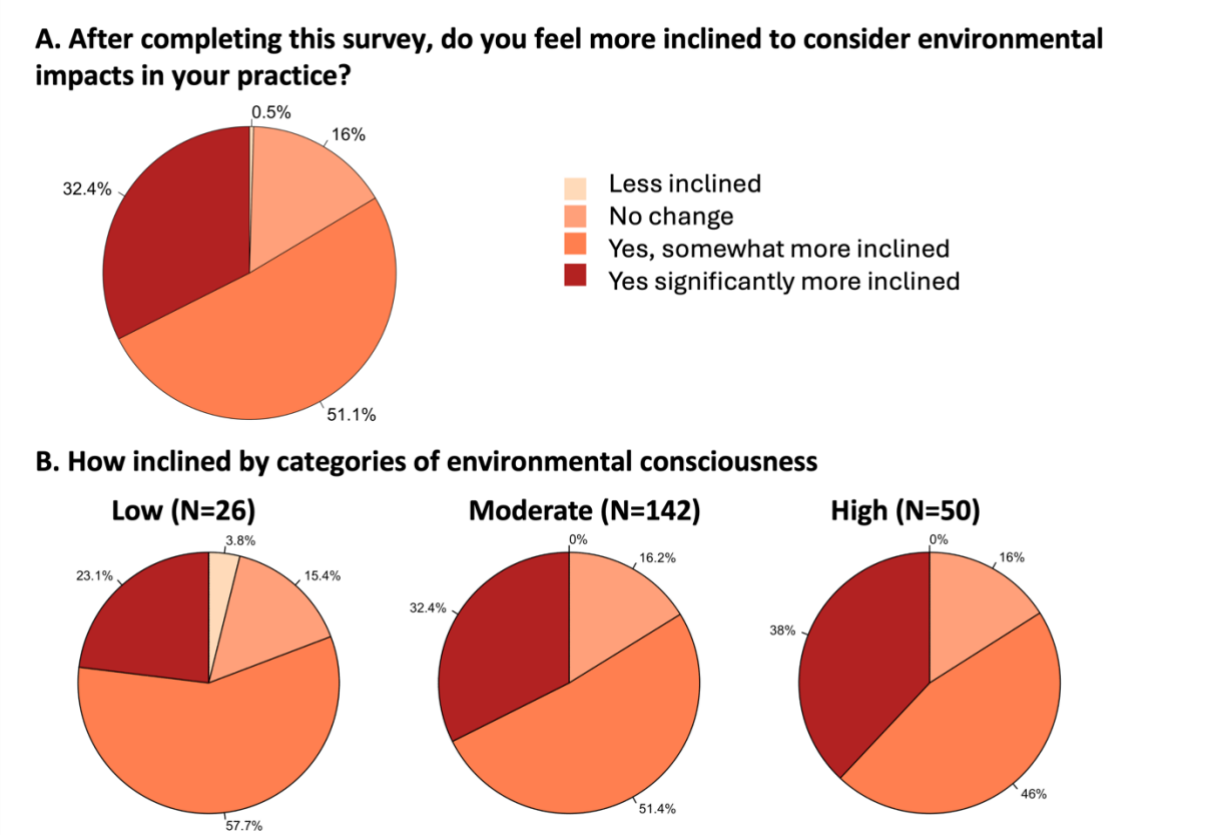
Caption: Distribution of correct answers to environmental knowledge questions according to self-reported levels of environmental consciousness (low, moderate, high). Subgroup comparisons were performed using the Kruskal–Wallis test.

Figure S3 - Key barriers to sustainable imaging



Caption: Reported barriers, strategies, incentives, and communication tools to enhance sustainability in cardiovascular imaging (N = 218). Data are presented as percentages of respondents.
Abbreviation : CO_2: carbon dioxide, kg: kilograms

Figure S4 – Change in practice.



Caption: Change in willingness to consider environmental sustainability in cardiovascular imaging practice after completing the survey (N = 218). Data are presented as percentages of respondents.
Low – 'I rarely consider environmental impact in my daily decisions"; Moderate – 'I sometimes consider environmental impact and make eco-friendly choices when convenient"; "High - Environmental considerations actively guide many of my daily decisions and habits"