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**Attitudes of female staff and students from two United Kingdom Medical Schools towards donating normal healthy breast tissue and blood samples for biomedical research**

Harriet Wilson and Valerie Speirs\*

University of Leeds, Leeds LS2 9JT, UK

\*v.speirs@leeds.ac.uk

By 2030, more than 1.2 million women could be living with, or after a breast cancer diagnosis, and around 185,000 lives could be lost to the disease. To investigate and fully understand the biological changes involved in breast cancer initiation, requires studying normal human breast tissue. The Komen Tissue Bank [1] is the only existing biobank which collects normal breast tissue and blood samples from healthy women, exclusively. While this bank provides samples worldwide, issues may arise for procurement of fresh samples e.g. those required to generate cell cultures for researchers outside of the US. The aim of this study was to collect the opinions of healthy female staff and students from two UK Medical Schools on breast tissue donation with a view to assessing the feasibility of implementing such a scheme in the UK.

Ethical approval was obtained (Leeds School of Medicine Research Ethics Committee, SoMREC/13/028). A Bristol Online Survey was designed and circulated by email to female undergraduates (years 3 and above), postgraduates and female staff members in the Faculty of Medicine and Health at the University of Leeds and at Hull York Medical School. The questionnaire remained open for 2 weeks and was circulated via University email with a reminder sent after 1 week.

Responses to the questionnaire are summarised in Table 1. Of 321 participants (mean age 33, range 20-66 years), 194 were staff, 107 were undergraduate and 20 were graduate students, with over 96% prepared to share a basic history. Over one third were willing to undergo a breast biopsy for tissue donation. Those who refused, or were unsure, required more information. Many agreed that following information about the procedure, pain involved and any side-effects, they would consider voluntary biopsy. Participants were generally more open to donating a blood sample (88%); those answering "No" or "Don't know" highlighted the need for more information. Other reasons included fear of blood tests and unwillingness to donate without a medical reason.

1 Existing studies addressing women's attitudes to tissue donation for research have been in the  
2 context of a potential breast cancer diagnosis. Sixty-six percent of women attending screening  
3 mammography were willing to donate blood or saliva during their visit [2]. A survey of early breast  
4 cancer patients (suspected or diagnosed) to undergo research-dedicated biopsies showed  
5 acceptance of >50% [3]. These findings are in line with our study, where women were less keen to  
6 donate unless already undergoing the procedure for a medical reason, stating "I would if I was  
7 having the biopsy anyway but not otherwise". However our study is distinct in its target audience of  
8 healthy women not already undergoing screening or diagnostic procedures for breast cancer.  
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10 While the study has provided some insight into the opinions of UK women regarding voluntary  
11 donation of breast tissue for research purposes, it cannot be considered representative. Information  
12 was gathered from individuals who are likely to be well-educated, with many also having a medical  
13 background. Opinions of the general public may be more difficult to access, but would provide a  
14 more balanced view, which would be valuable for assessing the enthusiasm for this type of scheme.  
15 Nevertheless, studies have shown the level of public support and inclination to donate human  
16 tissues for biomedical research in the UK is high [4]. Together with our proof of principle survey,  
17 there is potential to establish such a programme, complementing what the Komen Tissue Bank  
18 offers.  
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### 33 **Compliance with ethical standards**

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37 (SoMREC/13/028)  
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Table 1

Responses to Breast Tissue Donation Questionnaire

Question	Yes (%)	No (%)	Unsure (%)	Other (%)
Would you be willing to share the following information in a medical questionnaire:				
Smoking history (past/current/never)	97.5	2.2	0.3	0
Alcohol intake	98.8	0.9	0.3	0
Use of the oral contraceptive pill	97.2	2.2	0.6	0
History of previous live births	96.6	2.5	0.9	0
Family history of breast cancer	96.9	1.8	1.3	0
Menopausal status	96.3	1.5	2.2	0
If a breast tissue donation scheme were available in the UK, would you be willing to donate a blood sample (around 2-3 teaspoons)?	88.5	0.9	7.8	2.8
Similarly, would you be willing to undergo a breast biopsy in order to donate a small sample of breast tissue?	36.8	11.2	42.4	9.6 <sup>1</sup>
What location would you find most convenient for donation?				
Hospital	60.3	n/a	n/a	n/a
University campus	30.9	n/a	n/a	n/a
Other	8.8 <sup>2</sup>	n/a	n/a	n/a
Would you be willing to travel to donate?	25.2	29.3	0	10.9 <sup>3</sup>
Only if costs were reimbursed	34.6			
If you are a current/future Doctor <sup>4</sup> , would you be willing to volunteer at a donation event in the future? (e.g. taking medical histories or carrying out blood sampling/breast biopsy)	80.0	7.0	7.0	6.0