

Proposal to Change the Upper Age Limit for Offers from Lung Donors

Background

NHSBT has a series of criteria regarded as absolute contra-indications to organ donation. These are both general and organ specific:

http://www.odt.nhs.uk/pdf/contraindications_to_organ_donation.pdf

For the lung they are:

1. Lungs

- DCD donor age >65 years (on or after their 65th birthday)
- DBD donor age >70 years (on or after their 70th birthday)
- Previous intra-thoracic malignancy
- Significant, chronic destructive or suppurative lung disease (those with controlled asthma are suitable donors)
- Chest X-ray evidence of major pulmonary consolidation

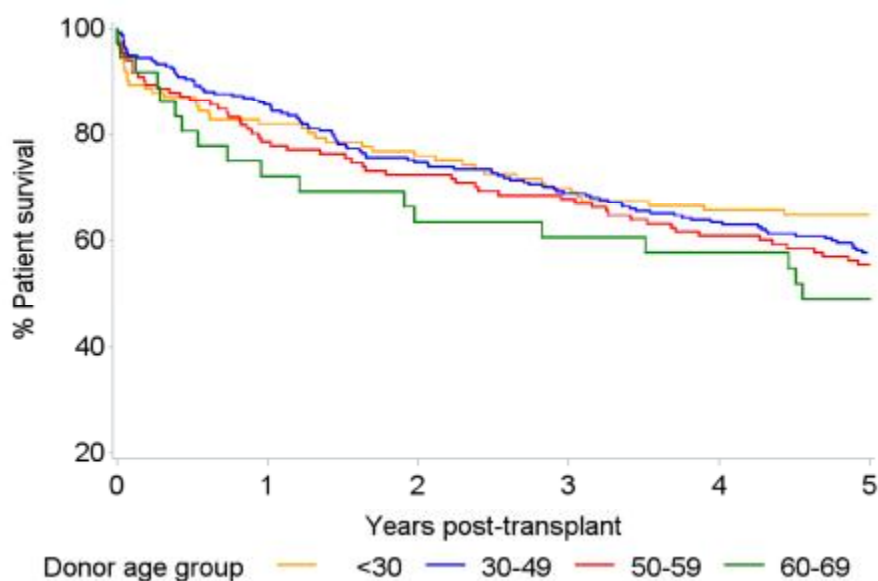
The upper age limits are largely arbitrary. For comparison, the equivalent ages for the other solid organs are: Liver and kidney 85, Heart 65, Pancreas 66 (DBD) 65 (DCD) and Bowel 56.

These limits have the very practical advantage that the SNOD does not need to pursue pointless consent and the recipient teams are not bombarded with pointless offers.

Lung recipients have a high chance of dying on the waiting list – the median waiting time is 230 days, and 3 years after listing 30% of recipients will have died, been removed or are still waiting:

http://www.odt.nhs.uk/pdf/organ_specific_report_cardiothoracic_2016.pdf

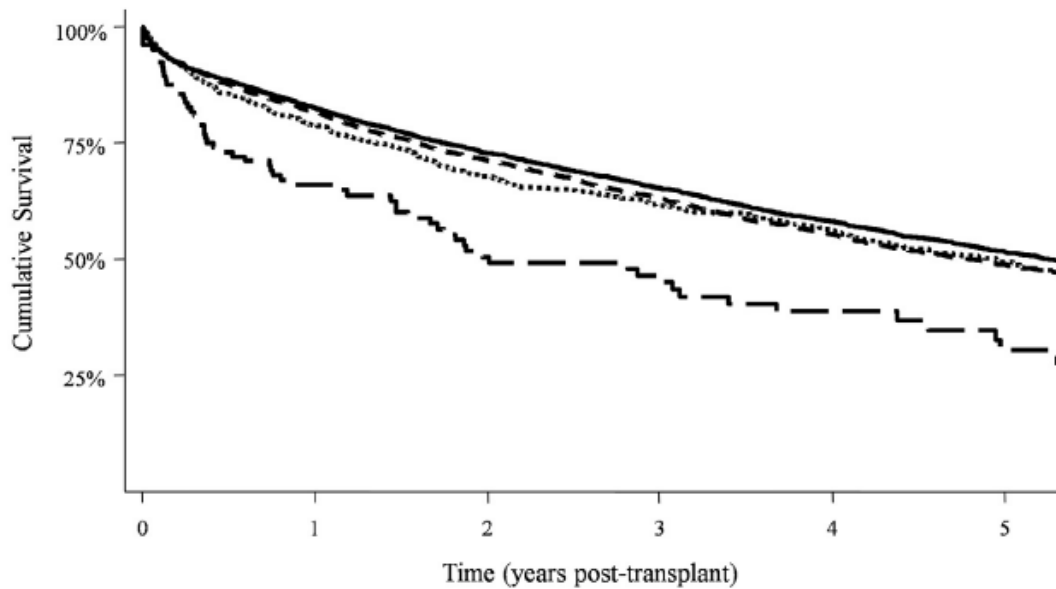
Evidence for the Effect of Age of Donor



This graph shows survival by donor age group for adult lung transplants from 2007 to 2011. There is no statistical difference in survival for lungs actually used, for any donor age group, although the numbers above 60 are small.

In a further analysis, related to the presentation on lung ischaemic time, there was no significant added risk with longer ischaemic times in older donors.

A review of UNOS data, published in 2013 (J Heart Lung Transplant 2013;32:760–768) showed a disadvantage only in donors over 65, and this was mid-term only, with no increased risk of BOS.



Again, the numbers are small, with only 104 donors aged over 65. Most of this effect is explained by transplanting into older recipients – mean age was 58 – and more than half had IPF.

Thus older donors had no disadvantage up to age 65, and carefully selected donors at older ages may function well.

By contrast, smoking in donors is associated with distinctly poorer outcomes:

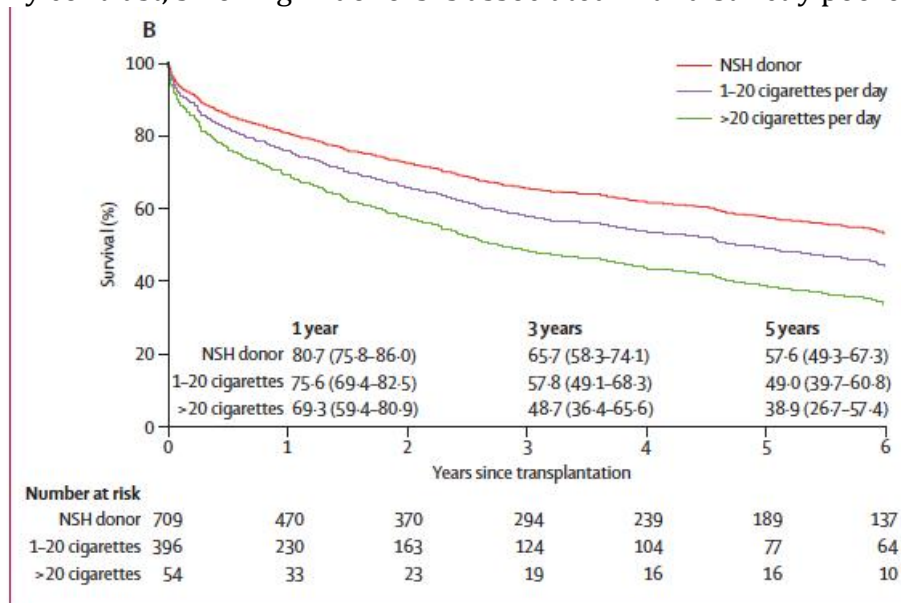


Figure 3: Survival of lung transplantation patients in relation to donor's smoking status (A), and numbers of cigarettes smoked (B), adjusted for other independent risk factors
 NSH=negative smoking history. PSH=positive smoking history.

This graph is from Bonser et al, Lancet. 2012 Aug 25;380(9843):747-55, and demonstrates a disadvantage found in other large registries. There is both an early and a late cost to using smoking donors.

Proposal

CTAG should consider raising the upper age limit for lung donation to **75** for both DCD and DBD donors, but ***only for known non-smokers***.

Impact of the change

Using data from the UK Transplant Registry, we obtained the numbers of non-smoking donors with no history of cardiothoracic disease and who did not have explicit non-consent for lung donation recorded, who donated at least one organ in the age range 65-75 in the last five years. For those donors whose lungs were not offered, the majority had donor age as the recorded not offered reason.

All solid organ donors aged 65-75 with no history of smoking or cardiothoracic disease and did not have explicit non-consent for lung donation recorded							
Donor Type		2012/13	2013/14	2014/15	2015/16	2016/17	Total
DBD	All	59	59	64	76	40	298
	Offered	22	21	25	35	16	119
	Donated	3	5	7	2	2	19
	Transplanted	3	4	7	2	2	18
DCD	All	57	80	57	65	44	303
	Offered	5	13	0	3	1	22
	Donated	0	1	0	1	0	2
	Transplanted	0	1	0	1	0	2

Note that consent may not have been sought in all these cases due to donors being outside the age criteria

From this data, it can be seen that consent is often gained for lung donation, even in the DCD setting (the numbers hardly change if we also include those for whom there was no lung consent – see Appendix) 20 of these lungs, 19 from the 65-70 range) were transplanted.

If all of those fulfilling our criteria were to be offered, it would appear to have almost no impact on SNOD workload and result (from 2016-17 data) in an additional 80 offers per year – less than one every 4 days.

CTAG are asked to endorse (or not) this change, and discuss any additional criteria which might be used. It is strongly suggested that best PO2 is ***not*** used as an additional criterion – see Appendix.

I'm very grateful to Rachel Hogg for having produced the data on potential donors, and to Esther Wong for the graph of age-related outcomes.

John Dark April 2017