health professionals are still confused about a brain-oriented concept of death.

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The Successful Use of Older Donors for Liver Transplantation

To the Editor.—The supply of livers for transplantation has been limited by an arbitrary 45- or 50-year upper age ceiling for donor candidacy,[1] a ceiling that Darby et al[2] suggest may be too restrictive. To see if donor age affects results, we analyzed the fate of 75 adult livers transplanted in December 1988 and January 1989.

Study.—Conditions of brain death and acceptability of liver function tests were met by the usual standards of our procurement program.[3] Ten donors were 51 to 54 years old and the others had an average age of 26.9 years (Table). Donors beyond age 54 years were not arbitrarily excluded because of age. However, during the 2-month study, 15 other offers of livers from donors older than 50 years were refused; our person on call declined 10 of these for nonspecific "judgment" reasons that probably reflected the age factor. The other 5 refusals were because of cardiovascular instability, poor liver function, poor oxygenation, or other miscellaneous reasons.

The older donors were accepted from Georgia (three), New York (two), Florida (one), South Carolina (one), New Hampshire (one), Bermuda (one), and Pittsburgh, Pa (one). The livers from the distant old donors had been turned down by other liver transplant centers. Compared with younger donors, a greater proportion of older donors were women and had medical problems (vs trauma) as the cause of death. Older donors had a higher incidence of vasopressor drug support and a zero incidence of concomitant pancreas procurement (Table). Cold ischemia time was equivalent in the two groups after preservation with University of Wisconsin solution.[4-6] All livers underwent biopsy and were found acceptable. Transplantation was to ABO identical or compatible recipients.

The recipients of the livers from older and younger donors were of similar age (Table). Although the older donors all had some degree of aortic atherosclerosis, the celiac artery was suitable for anastomosis in every case. All 10 older grafts functioned adequately. The highest initial aminotransferase levels (aspartate/alanine) among recipients of older livers during the first postoperative week ranged from 355 to 4500 U/L (mean ± SD, 1120.4 ± 1249.5 U/L). No recipient has died. Nine of 10 patients have been discharged from the hospital and are well. The other patient had complications from biliary tract reconstruction and underwent retransplantation 6 weeks later.

Comment.—The study shows how effectively livers from older donors can be used. Popper[7] points out that livers do not undergo senescence in the same way as hearts, kidneys, and other organs.

The uniformly good performance of these older grafts was aided by the donor operations being simpler on the average than those with the younger donors since they did not involve removal of the pancreas or thoracic organs.

Comparison of Older and Younger Liver Donors

	No. (%) of Donors	
	<50 y	>50 y
No. of patients	58	10
No. of transplants	65	10
Recipient mean (± SD) age, y	42.5 (± 11.5)	44.1 (± 14.8)
Donor mean (± SD) age, y	26.9 (± 10.5)	52.4 (± 1.7)
Cause of death		
Motor-vehicle accident	22 (34)	2 (20)
Gunshot wound and other trauma	18 (28)	1 (10)
Intracerebral hemorrhage	13 (20)	3 (30)
Subarachnoid hemorrhage	2 (3)	4 (40)
Miscellaneous	10 (15)	...
Sex		
M	49 (75)	4 (40)
F	16 (25)	6 (60)
Pressor support	45 (69)	9 (90)
Pancreas procurement	13 (20)	0 (0)
Cold ischemia, h (± SD)	12.4 (± 5.0)	13.7 (± 5.5)
Need for early retransplantation	8 (13)	1 (10)
Recipient survival	53 (91)	10 (100)

The 65 liver homografts taken from donors younger than 50 years were transplanted to 58 recipients (Table); 1 of these patients was given three livers and 5 others received two. Eight (13%) of the 65 younger livers had to be removed and replaced at an early time because of primary nonfunction, technical problems, or rejection. The single most common association with primary nonfunction was the concomitant removal of a pancreas by a team from another institution. Four of 13 livers removed under these circumstances had primary nonfunction.

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Passive Smoking on Commercial Airlines

To the Editor.—"Passive Smoking on Commercial Airline Flights," by Mattson et al,[1] is clearly intended to prove a point (smoking on airliners is hazardous to nonsmokers) rather than simply to establish the truth (whether smoking on airliners is hazardous to nonsmokers). Consider these points, none of which were dealt with in the report:

The mean quantity of nicotine reported, 12 $\mu g/m^3$, amounts to only about 17 parts per billion—0.017 ppm—when corrected upward for cabin air density equivalent to an altitude of about 2400 m. (I am informed that hydrogen cyanide is breathable for a substantial period at several 1000 times that concentration.) Cabin air is replaced every 4 to 5 minutes, according to Boeing, on the basis of 0.6 m^3/min per passenger.

At 16 respirations per minute, or about 10 L, it would take an hour and 40 minutes to absorb 12 millionths of a gram of nicotine at the mean level. Continuous exposure in the 4 hours of flight would total slightly less than 30 millionths of a gram.

Nicotine concentrations cited in ground environments—offices, restaurants, and so on—were in the same general range (except for unventilated