

# If We Pay Football Players, Why Not Kidney Donors?

*The risks are lower and the screening process more rigorous for kidney donors.*

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A variety of laws regulate, tax, or prohibit risky activities. A number of these laws are paternalistic in the sense that they seek to protect the willing participants in these activities rather than prevent harm to third parties. Likewise, paternalistic concern for donors' welfare is a key motivation for stringent regulation of living kidney donation.

Although living kidney donation is a common medical procedure and donors usually enjoy a full recovery, the loss of a kidney poses long-term health risks, in particular that of renal failure if the donor's remaining kidney fails. In the United States and most every other country (with the notable exception of Iran), kidney donation is permitted but financial compensation for donors is prohibited. Not only is there no legal market for kidneys, donors in the United States are often not even reimbursed for their full out-of-pocket cost in making the donation.

The ban on compensation may protect potential donors from the temptation of easing their financial situation by giving up a kidney, a choice they may regret in later years. But this regulation has dire consequences.

The need for transplantable kidneys is great, far exceeding current availability from deceased and living donations. The official waiting list of Americans with renal failure is now approximately 100,000, with a typical wait time of five years or more. Those on

the waiting list are kept alive by dialysis, which is both costly to taxpayers (because Medicare pays for a large percentage of the costs) and debilitating to the patients. Even with dialysis, thousands of renal-failure patients die each year for want of a suitable kidney.

This wait could be largely eliminated by easing the current ban on compensation for donors. An adequate supply of living donors would be especially valuable because living donors tend to provide higher quality kidneys with greater opportunity for developing a close tissue match, thus reducing the chance of rejection. Current estimates suggest that if compensation were permitted, the cost of payments for recruiting an adequate number of donors would be substantially less than the savings from reducing the number of renal patients on dialysis at government expense.

In this article we contrast the compensation ban on organ donation with the legal treatment of football and other violent sports in which both acute and chronic injuries to participants are common. While there is some debate about how best to regulate these sports in order to reduce the risks, there appears to be no debate about whether participants should be paid. For the best adult football players, professional contracts worth multiple millions of dollars are the norm. A ban on professionalism in football would be the end of the National Football League, which is currently the highest grossing sports league in the world; the NFL collected \$13 billion in revenue in 2016 and each of the 32 teams has a market value of anywhere from \$1.6 billion to \$4.8 billion.

While the recent evidence on the long-term medical damage from concussion has caused widespread concern, there is no prominent voice calling for a ban on professional football. Indeed, a ban is unthinkable in the foreseeable future. That observation helps illustrate the importance of history, custom, and established

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interests in shaping the debate over regulating risky activity. But if we could start fresh, the current configuration of activities for which compensation is banned would seem very odd.

If ethical concerns persuade thoughtful people that the “right” answer is to ban compensation for kidney donation, then the same logic would suggest that compensation should also be banned for participation in violent sports. If the “right” answer is to permit compensation for participation in violent sports, then compensation for kidney donation should also be permitted. We see no logical basis for the current combination of banning compensation for kidney donors while allowing compensation for football players and boxers.

### THE RISKS TO PARTICIPANTS

Each year in the United States, 6,000 people donate a kidney,

voluntarily and without compensation for assuming the medical risks from surgery and living with just one kidney. We compare those risks with the risks stemming from participation in violent sports that do not ban inducements for participation at the highest level. Although the comparison is not perfect, we provide some statistics that suggest that a man who signs a contract to play in the NFL for a year is consenting to be exposed to far greater medical risks than someone who volunteers to donate a kidney.

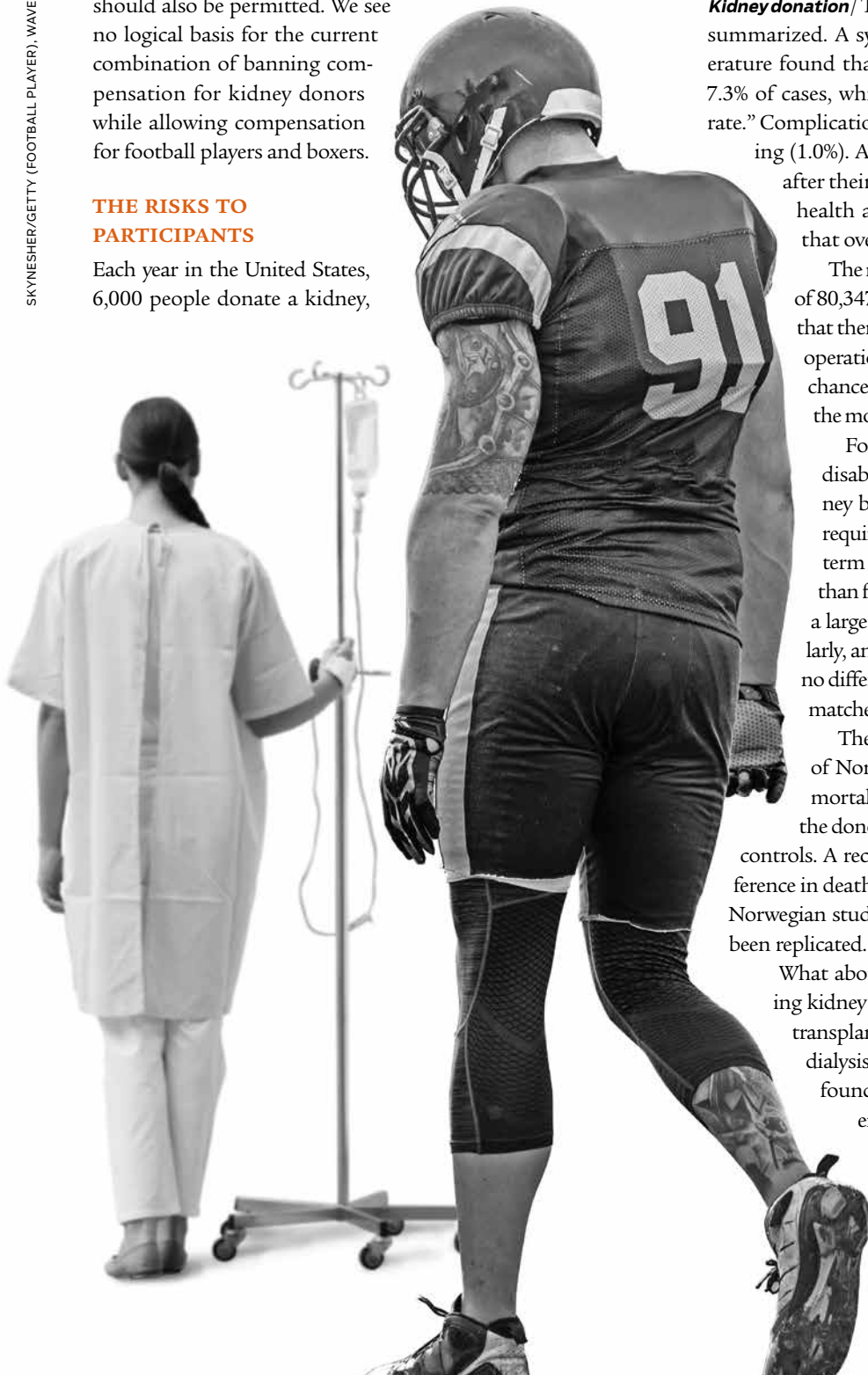
**Kidney donation**/ The immediate risks from surgery can be briefly summarized. A systematic review and meta-analysis of the literature found that there were post-operative complications in 7.3% of cases, which the authors deemed a “low complication rate.” Complications included wound infection (1.6%) and bleeding (1.0%). A questionnaire study of donors three months after their operation found that 18.5% rated their overall health as “somewhat worse” than before, suggesting that over 80% had fully recovered in a subjective sense.

The most serious outcome, death, is quite rare. A study of 80,347 donors over the period 1994–2009 determined that there had been 25 deaths, for a rate of 3.1 per 10,000 operations. That is about twice as high as the annual chance of being killed in a motor vehicle accident for the most relevant age group (45–64) during that period.

Following recovery, donors typically do not suffer disability related to the loss of their remaining kidney because one functioning kidney does everything required for normal functioning of the body. The long-term mortality risk was no higher for living donors than for age- and comorbidity-matched participants in a large longitudinal health survey (NHANES III). Similarly, an analysis of 3,368 donors age 55 and over found no difference in all-cause mortality in comparison with a matched sample from the Health in Retirement Survey.

The only exception to this null conclusion is a study of Norwegian donors that found a divergence in the mortality rates after 10 years, so that by 25 years 18% of the donors had died compared with 13% of the matched controls. A recent review article confirms that there is no difference in death rates for at least the first 10 years, and that the Norwegian study’s conclusion of divergence after that has not been replicated.

What about the particular threat that a donor’s remaining kidney will fail, which in the absence of an immediate transplant would mean that the donor will have to go on dialysis? The best study of donors in the United States found a higher cumulative incidence of failure and end stage renal disease (ESRD) for donors than non-donors, 0.31% versus 0.04%. While the risk is significantly elevated for donors, it remains very low in an absolute sense, representing an increased risk of about 1 in 400.



## HEALTH &amp; MEDICINE

Finally, a questionnaire study of 2,455 donors who were between five and 48 years from their surgery found that 84% were satisfied with their lives. The likelihood of satisfaction was enhanced by the donors' feeling that their gift had positive effects on their relationships.

**Football/** One challenge in making a meaningful comparison between the risks entailed in kidney donation and the risks entailed in participation in contact sports is that the latter may stretch out for many years and involve not one choice (donate or not) but a series of choices regarding participation. The young men who are drafted into the NFL each year have almost all played organized football for a number of years, including in high school and college, and have been exposed to the risk of injury throughout. Various comparisons of football with the single act of donation may be possible, such as "play in one game" or "play for one season." But given that our focus is on inducements, we take a somewhat different approach and focus on the risks associated with a professional career as the unit of account.

Rough physical contact is part of the game of football and injuries are common from an early age. For boys less than 20 years old, football, among all the sports and other types of recreational activities, is the most common cause of injury requiring a trip to the emergency room. An analysis of emergency room visits for 2001–2009 estimated there were 350,000 youths per year treated for football injuries, almost all males.

Of these, 25,000 were treated for non-fatal traumatic brain injuries (TBI), typically concussion, of which over half (13,667) were males age 15–19. About 1.5 million males in this age group played organized tackle football in 2009, and if we can assume that most of the injuries affected those rather than youths playing pick-up games, the treated TBI injury rate was close to 1%. The overall rate is probably much higher because most concussions are not treated.

An alternative set of national estimates links concussion risk to game exposure for school football teams. The authors' estimates suggest that over the course of a 10-game playing season, a high school player would have a 1.55% chance of being concussed and a college player a 3.0% chance. These statistics are somewhat out of date and there has been a strong upward trend in reported concussions in organized football—in part because of the national "Heads Up" campaign initiated by the Centers for Disease Control in 2004, increased media attention, and the passage of youth sports concussion laws in all 50 states. These laws specify that young players with possible concussions must be removed from the game and cleared for return by a set protocol.

A recent report by Harvard Law School found that in 2016, the 2,274 active players in the NFL experienced 2,066 injuries during the preseason and regular season, in which "injury" is defined as an event recorded by the team trainer that would typically require time lost from practice or game. Of those injuries, 244 were concussions, which works out to 0.073 concussions per player-season. At 7.3%, that is over twice the rate for college players and about

equal to the rate of surgical complications in kidney donation.

A recent study of "life after football" brings together the official injury reports and survey information to paint a grim picture. The authors report that 93% of former NFL players missed at least one game as a result of injury and half had three or more major injuries, often requiring surgery. For a substantial majority, injuries ended their career or contributed to the decision to end their career. Nine of 10 former players have nagging aches and pains from football when they wake up, and for most the pain lasts all day. For those age 30–49, the ability to work is impaired by injury.

But what has garnered considerable recent attention and concern is the high percentage of former players who have chronic traumatic encephalopathy (CTE) by the time they die. CTE is a progressive neurodegeneration associated with repetitive head trauma, with a variety of symptoms: impulsivity, depression, apathy, anxiety, explosivity, episodic memory loss, and attention and executive function problems. A recent postmortem study of a sample of donated brains of former NFL players found that 110 of 111 indicated either mild or (more commonly) severe CTE. Interviews with family members found that behavior, mood, and cognitive symptoms were common among this group.

These findings do not imply that 99% of former NFL players will have CTE. The brains in this study were voluntarily submitted for examination by family members who were often motivated by a desire to know the cause of their loved ones' dementia or other neurological problems—which is to say, the brains of those who died without such problems may be largely missing from the sample. But the 111 brains do represent 8.5% of the 1,300 former NFL players who died during the period that these brains were donated. That places something of a logical lower bound on the prevalence of CTE. Presumably the true prevalence is much higher than 8.5%.

The other problem with these remarkable findings is that they do not provide a direct indication of the cause or causes of the CTE and associated disabilities. Repetitive head trauma is recognized as a necessary but not sufficient condition for CTE. The subjects had been exposed to repetitive head trauma throughout their careers as football players, which typically would have started in high school or well before. In fact, there is some evidence that age at first exposure to football may be related to the likelihood of impaired cognitive performance by former football players. Elite players who choose to go professional following college likely increase their chances of neurological problems in later life, which are already high as a result of their exposure up to that point. Unfortunately, the science does not provide a basis for sorting out the additional contribution of an NFL career to this health burden.

While it is not possible to do a precise "apples to apples" comparison of the medical risks associated with kidney donation and the risks associated with a professional football career, it seems clear that the acute risk of injury and of long-term disability are far higher for the football player. As discussed above, most NFL veterans live out their lives following retirement with serious physical and mental disabilities. The vast majority of kidney donors lead

entirely normal lives following recovery from the initial operation.

### THE LIMITS OF CONSENT

Ordinarily, people are born with two kidneys but they only need one to sustain full health. For that reason, adults can donate a kidney and, after recovering from the operation, expect their life span and health will not be much affected. Still, as explained above, there are risks entailed in the operation, and the loss of redundancy in kidney function may cause medical problems in later life if a donor is unlucky enough to suffer kidney failure.

Concern for the potential kidney donor's welfare motivates a variety of restrictions on donation, including a ban on financial compensation. This ban is paternalistic: it deprives donors of compensation in part because the allure of a financial payoff may cause some people to choose to donate against what might be considered, given the risks, their "true" best interests.

Is that restriction justified? Whether and when sane, sober, well-informed adults should be banned by government authority from choosing to engage in an activity that risks their own life and limb is an ancient point of contention. There are a variety of hazardous activities that are permitted with no legal bar to receiving compensation. Included on this list are such occupations as logging, roofing, commercial fishing, and military service. Also included are violent sports such as football, boxing, and mixed martial arts. These examples illustrate a broad endorsement of the principle that consenting adults should be allowed to exchange (in a probabilistic sense) their physical health and safety for financial compensation, even in some instances in which the ultimate product is simply entertainment.

**The Harm Principle and external effects/** In the search for a principled basis for setting legal boundaries on self-hazardous choices, a natural starting point is the tenet that adult choices that do not hurt others should be allowed by government. This Harm Principle was developed by John Stuart Mill in his classic treatise *On Liberty* (1859). It provides a rationale for the view that adults in the possession of their faculties should be free to choose to engage in risky activities if that choice does not harm others who are not part of the bargain. In this view, paternalistic regulations—those imposed for the individual's own good—should be limited to restrictions on children or on adults who are not in a position to make free and well-informed choices.

While the Harm Principle appears to create a broad scope for individual autonomy, governments limit autonomy if negative external effects are considered problematic. Most individuals are enmeshed in a web of sentiment and responsibility to family members, neighbors, coworkers, and others. Thus, a risky choice that results in injury or death will tend to have harmful consequences for other people, including those who had no direct authority or influence over that choice. Furthermore, third-party effects are created by participation in private and government insurance programs and eligibility for safety-net programs in which any financial costs (for medical care, for example) are broadly shared.

In the case of living kidney donation, the direct external effects include considerable surplus of benefit over cost. Enhancing the quality and quantity of kidneys available for transplantation would reduce disability and save lives among patients while also saving the cost (to taxpayers) of maintaining these patients on dialysis. Hence for kidney donation—unlike, say, dueling or boxing (or a great variety of other risky activities)—it appears that the external effects are far more positive than negative.

**Cognitive biases and limitations/** The belief that adults are able to discern and act on their true interests when faced with complex choices is basic to Mill's argument for freedom from government interference. During the last half-century, economists and behavioral scientists have explored the limitations and biases in decision-making, demonstrating that even sane and sober adults tend to make systematic errors. When the stakes are high, as they are in choosing to donate a kidney or play professional football, even a free-choice advocate may accept that some limits are warranted.

Here we very briefly consider the relevant issues and conclude that if the National Organ Transplant Act of 1984 (NOTA) were amended to allow payments to donors, potential kidney donors could be protected against being unduly tempted through the existing structure of screening, counseling, and delay. In contrast, it is not clear that NFL recruits have similar protections in place.

In the ideal, a rational person faced with an important decision (donate a kidney, sign a contract to play professional football) would want to proceed as a decision analyst would instruct. The goal is to combine the objective consequences of the option with the individual's subjective valuation of those consequences, including timing (now versus later) and likelihood. This rational person might go about making her decision using the following the exercise:

- List all possible consequences over one's lifetime.
- Estimate the probability of each consequence.
- Assess the utility gain or loss of each consequence according to the decision-maker's own preferences.
- Calculate whether the expected value in terms of utility gains and losses is positive.

Needless to say, that is not how such decisions are made in practice, although in the case of kidney donation (and not football) much of the relevant information will at least be provided as part of the counseling required of potential donors. The difficulty of making an informed decision is greater because the decider can only go down that path once.

The issue is actually not whether individuals should be trusted to act like well-informed decision analysts, but rather whether they could benefit from legal restrictions on the menu of possibilities available to them. This challenge has become better focused as research in behavioral science has documented the tendency of adults to make systematic errors in their decisions. Much of this research has focused on choices that have uncertain outcomes, or outcomes that are distributed over time, or require

## HEALTH &amp; MEDICINE

the decisionmaker to predict her sense of well-being under the scenarios implied by the available choices. For example, people tend to discount the value of delayed consequences according to how far in the future they would be experienced and can make sensible choices between prospects that offer a payoff in one year or a larger payoff in two years. However, prospects with immediate payoffs are often tempting out of proportion to their objective value and induce impulsive choices that are later regretted.

It is helpful to deconstruct the decision to donate a kidney under both the current regime (no compensation) and a hypothetical regime (in which the donor would be financially compensated). Living donation is an arduous process that would not be undertaken by a well-informed person without a substantial reward of some sort (whether monetary or emotional). Under the current regime, only about 6,000 living donors volunteer each year. Almost all of them specify who is to receive their kidney, and as a consequence the donor has the satisfaction of saving the life of a family member or friend, and presumably enjoys the recipient's gratitude as well. Potential donors undergo screening, both medical and psychological. While donors do not have to pay the expense of the screening and operation, they may have lost earnings at the time that are not reimbursed. If they experience medical consequences years later, no financial help will be forthcoming from the beneficiaries of their gift or the kidney-donation system.

Everything about this process leans against making an impulsive decision to donate. Indeed, those who choose to become a donor may typically see it as an obligation rather than an opportunity. They may be under pressure from family members or may not see any acceptable alternative to the unpleasant prospect of donating. There is nothing of the "temptation" in this scenario, given the delays, the counseling, and the fact that much of the pain and risk precede the usually rewarding event of donation.

If the system for screening potential donors were preserved, but now with the possibility of compensation (for the sake of argument, say, worth \$50,000) then many more donors would come forward, especially for non-directed donations. For the additional donors, the payment would be a stronger incentive than the psychic rewards of a pure altruistic act. (In fact, in this regime some would-be family donors may decide to refrain, given the knowledge that other suitable kidneys are available.) The increase in donations would save many lives and reduce costs to taxpayers. But the question remains of whether the promise of payment would tend to encourage donations that are not in the donors' true interest as a decision analyst would define that interest.

For the potential donor, the prospect of financial reward may overcome concerns about the temporary pain and disability, the slight risk of death stemming from the operation, as well as the small probability of medical problems years or decades later. There is nothing intrinsically irrational about a willingness to assume medical risk in exchange for a substantial amount of money. But the quality of the choice may be influenced by the sequence of events. If donors were offered a \$50,000 check on the day that they volunteered to

donate, but did not have to actually go on the operating table for a year, impulsive, ill-considered donations might be the norm. But the disproportionate temptation of an immediate payoff could be managed if the payment were not made until after the operation, which in the normal course of events would take weeks or even months while the donor underwent screening and matching.

The delayed payoff would have the effect of protecting potential donors against impulsive decisions while respecting their underlying preferences for the value of the money vis-à-vis the medical risks of donation. The delay is in the spirit of the "nudge" approach to policy design popularized by Richard Thaler and Cass Sunstein. It is in contrast to a paternalistic approach that denies the validity of the donor's preferences. A recent survey, for example, found a sizable group that thought it was unacceptable to offer potential subjects in a risky medical experiment compensation of as much as \$10,000. The authors speculated that these respondents thought that a large payoff would induce people to participate who placed "too much" value on money (or too little on their health). These respondents were in effect privileging their own values over those of others.

The same concerns that apply to the quality of kidney donor decisions also apply to the decision to sign a contract to play in the NFL. Players are given little information about the risks. The longer-term risks (including the risk of CTE in middle age) have not been well quantified but appear to be far higher than for kidney donation. The payoff in both financial terms and status is also very high and immediate. Any counseling or screening that might occur is up to the player to pursue.

**Exploitation, coercion, race, and class** / Living kidney donors in the United States have above-average incomes (after adjusting for sex and age), perhaps as one reflection of the financial losses experienced by donors. In a new regime in which donors were paid a substantial fee, it is predictable that the influx of volunteers would have below-average incomes. The prospect of financially stressed individuals attempting to make ends meet by "selling" a kidney raises a red flag for some ethicists.

A compensation regime would expand the choice set for those in comfortable circumstances, but those in desperate circumstances might feel compelled to sell a kidney; in that sense, the option of selling could be seen as "coercive." Furthermore, a system that in part depended on the poor to supply kidneys could be seen as "exploiting" the poor. This line of thought is represented in a 2001 report of the National Bioethics Advisory Commission about paid participation in medical experiments:

Benefits threaten ... the voluntary nature of the choice, ... raise the danger that the potential participant's distributional disadvantage could be exploited [and] ... lead some prospective participants to enroll ... when it might be against their better judgment and when otherwise they would not do so.

We believe that using words like "coercion" and "exploitation" to characterize the introduction of a new option by which poor

people (and others) could earn a substantial amount of money provides more heat than light to this situation. Just because living donors would have lower incomes than current donors does not support a ban on compensation, which in fact limits the options available to the poor and thereby makes a bad situation (their lack of marketable assets) worse. But for anyone not persuaded by this argument, we note that these social justice concerns apply with at least equal force to compensating boxers; most American professional boxers were raised in lower-income neighborhoods and are either black or Hispanic.

As more has become known about the dangers of repeated head trauma, similar arguments regarding football have become more prominent. About 70% of NFL players are black, and Pacific Islanders are also overrepresented as compared to the American population. Accordingly, much attention has been paid to the concussion crisis as a race and class problem. As one observer recently noted, “What’s a little permanent brain damage when you’re facing a life of debilitating poverty?” In reality, however, NFL players are better educated themselves, and come from better educated homes, than is average for Americans, in part because the NFL typically recruits college students. Still, some NFL players, like some would-be kidney donors, come from poverty.

## CONCLUSION

Our claim is that there is a stronger case for compensating kidney donors than for compensating participants in violent sports. If this proposition is accepted, one implication is that there are only three logically consistent positions: allow compensation for both kidney donation and for violent sports; allow compensation for kidney donation but not for violent sports; or allow compensation for neither. Our current law and practice is perverse in endorsing a fourth regime: allowing compensation for violent sports but not kidney donation.

As to social justice concerns, we offer both a direct response and a response by analogy with violent sport. A fundamental norm of our culture and legal tradition is to respect the choices of (sane, sober, well informed, adult) individuals. That norm serves to limit government interference with private choices. It is supported by the right to liberty from undue government interference.

A well-developed organ procurement process in the American system seeks to ensure that potential donors are fully capable of making a good decision. Potential kidney donors are not only provided with full information, but also screened for mental and physical disability. While there is the possibility of “mistakes” (a decision to donate against the true best interests of the individual) under a compensated system, the screening, consent process, and delays should minimize the chance for the kind of errors that behavioral economics has demonstrated are common. Under such circumstances, the opportunity to be paid for donating a kidney is not exploitative or coercive, but rather welfare-enhancing.

We also argue by analogy with professional football, boxing, and other legal but violent sports. The medical risks to a profes-

sional career in these sports are much greater both in the near and long term than the risks of donating a kidney. On the other hand, the consent and screening process in professional sports is not as developed as in kidney donation. The social justice concerns stem from the fact that most players are black and some come from impoverished backgrounds. In sum, the arguments against compensating kidney donors apply with equal or greater force to compensating athletes in these sports.

Note that these arguments focus on the donors’ welfare and ignore the welfare of people in need of a kidney. A comprehensive evaluation of amending NOTA to allow compensation requires that both groups be considered. Such an evaluation, conducted by P.J. Held and colleagues, reached the following conclusion about a regime in which living donors were offered enough compensation (\$45,000) to end the kidney shortage:

From the viewpoint of society, the net benefit from saving thousands of lives each year and reducing the suffering of 100,000 more receiving dialysis would be about \$46 billion per year, with the benefits exceeding the costs by a factor of 3. In addition, it would save taxpayers about \$12 billion each year.

The present value of this flow of social benefits would exceed \$1.3 trillion.

As far as we know, there has been no cost-benefit analysis of the analogous reform in football, namely to ban professional compensation. But a first cut is the market value of NFL teams because that value reflects the present value of future ticket sales and broadcast payments, net of costs, under the current legal regime. Presumably a ban on compensation would end professional football and drive the value of the 32 current teams to zero. That current value, according to *Forbes*, is about \$56 billion. That amount should be modified to take account of subsidies by host cities, and in the other direction to take account of consumer surplus, but regardless it is clear that the monetized value of allowing compensation for professional football players is far less than for allowing compensation for kidney donors. R

## READINGS

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