

**REFERENCES CITED IN  
“JEHOVAH’S WITNESSES AND THE QUESTION OF BLOOD”  
(WTS, 1977)**

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The following 106 References are provided in the Watchtower Society’s 1977 booklet *Jehovah’s Witnesses and the Question of Blood*. To show the context of each Reference, the relevant words from the Booklet are provided.

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Those in the medical field and many others regard the transfer of blood from one human to another as an accepted therapeutic method. **(Ref 1. *The Gift Relationship* (1971), by Professor Richard M. Titmuss, p. 27.)**

Theologian and Reformationist John Calvin, for example, acknowledged about the prohibition on blood that “this law had been given to the whole world immediately after the flood.” **(Ref 2. *Calvin’s New Testament Commentaries; The Acts of the Apostles, Vol. II, p. 50.*)**

And Gerhard von Rad, professor at Heidelberg University, refers to Genesis 9:3, 4, as “an ordinance for all mankind,” because all mankind has descended from Noah. **(Ref 3. *Genesis—A Commentary* (1961), by Gerhard von Rad, p. 128.)**

Since the law on blood was linked with God’s pronouncement that emphasized a high regard for human life, we can appreciate the observations of Rabbi Benno Jacob: “Thus the two prohibitions belong together. They are the most elementary demands of humanity in the literal sense of the word. . . . The permission to eat meat, but without its blood, and the prohibition against shedding human blood indicate the place of man within the world of the living . . . In summary: the reason for the prohibition of blood is of a *moral character*.... Later Judaism regarded this passage as establishing *fundamental ethics for every human being*.” (Italics added.) **(Ref 4. *Genesis* (1974), by B. Jacob, edited by E. I. and W. Jacob, p. 64)**

In fact, later Jews drew from the early part of Genesis seven “basic laws” for mankind, and this command to Noah and his sons about blood was one of them. **(Ref 5. *The Torah: A Modern Commentary, Genesis* (1974), by W. Gunther Plaut, p. 86)**

Concerning that Christian decree, Professor Walther Zimmerli, of the University of Gottingen, Germany, commented: “The first Judeo-Christian congregation in the decision reported on in Acts 15 made a distinction between the Law given to Israel through Moses and the command given [through] Noah to all the world.”—Zurcher Bibelkommentare. **(Ref 6. *Zurcher Bibelkommentare 1. Mose 1-11* (1967), p. 330)**

Eusebius, a third century writer who is considered the “father of Church history,” relates what occurred in Lyons (now in France) in the year 177 C.E. Religious enemies falsely accused Christians of eating infants. During the torture and execution of some Christians, a girl named

Biblias responded to the false accusation, saying: "How can we eat infants—we, to whom it is not lawful to eat the blood of beasts." (Ref 7. *The History of the Christian Church (1837)*, by William Jones, p. 106)

Similar false charges moved the early Latin theologian Tertullian (c. 160-230 C.E.) to point out that though Romans commonly drank blood, Christians certainly did not. He writes: "Let your unnatural ways blush before the Christians. We do not even have the blood of animals at our meals, for these consist of ordinary food.... At the trials of Christians you offer them sausages filled with blood. You are convinced, of course, that the very thing with which you try to make them deviate from the right way is unlawful for them. How is it that, when you are confident that they will shudder at the blood of an animal, you believe they will pant eagerly after human blood?" (Ref 8. *Tertullian, Apologetical Works, and Minucius Felix, Octavius*, translated by Rudolph Arbesmann (1950), p. 33.)

Also, referring to the decree of Acts 15:28, 29, [Tertullian] says: "The interdict upon 'blood' we shall understand to be [an interdict] much more upon human blood." (Ref 9. *The Ante-Nicene Fathers*, Vol. IV, pp. 85, 86)

Minucius Felix, a Roman lawyer who lived until about 250 C.E., makes the same point, writing: "So much do we shrink from human blood, that we do not use the blood even of eatable animals in our food." (Ref 10. *The Ante-Nicene Fathers*, Vol. IV, p. 192) \* Other references (from the second and third centuries) supporting this application of Acts 15:28, 29 are found in: Origen's *Against CeJsus* VIII, 29, 30 and *Commentary on Matthew* XI, 12; Clement's *The Instructor* II, 7 and *The Stromata* IV, 15; *The Clementine Homilies* VII, 4, 8; *Recognitions of Clement* IV, 36; *Justin Martyr's Dialogue* XXXIV; *Cyprian's Treatises* XII, 119; *The Teaching of the Twelve Apostles* VI; *Constitutions of the Holy Apostles* VI, 12; *Luclan's On the Death of Peregrinus* 16.

The historical evidence is so abundant and clear that Bishop John Kaye (1783-1853) could state categorically: "The Primitive Christians scrupulously complied with the decree pronounced by the Apostles at Jerusalem, in abstaining from things strangled and from blood." (Ref 11. *The Ecclesiastical History of the Second and Third Centuries (1845)*, by John Kaye, Bishop of Lincoln, p. 146.)

Commenting on Acts 15:29, Catholic Biblical scholar Giuseppe Ricciotti (1890-1964) refers to the incident at Lyons (described previously) as evidence that early 'Christians could not eat blood.' Then he adds, "but even in succeeding centuries down to the Middle Ages, we encounter unexpected echoes of this early 'abomination' [of blood], due unquestionably to the decree." (Ref 12. *The Acts of the Apostles (1958)*, by Guiseppe Ricclotti, p. 243)

For instance, the Quinisext Council held in 692 C.E. at Constantinople stated: "The divine Scripture commands us to abstain from blood, from things strangled, and from fornication. . . . If anyone henceforth venture to eat in any way the blood of an animal, if he be a clergyman, let him be deposed; if a layman, let him be cut off." (Ref. 13. *Nicene and Post-Nicene Fathers of the Christian Church*, by Philip Schaff and Henry Wace, Vol. XIV, p. 395)

Similarly, Otto of Bamberg (c. 1060-1139 C.E.), a noted prelate and evangelist, explained to converts in Pomerania "that they should not eat any thing unclean, or which died of itself, or was strangled, or sacrificed to idols, or the blood of animals." (Ref 14. *Tertullian, Vol. I*, translated by C. Dodgson (1842), p. 109.)

Luther wrote regarding Acts 15:28, 29: “Now if we want to have a church that conforms to this council (as is right, since it is the first and foremost council, and was held by the apostles themselves), we must teach and insist that henceforth no prince, lord, burgher, or peasant eat geese, doe, stag, or pork cooked in blood ... And burghers and peasants must abstain especially from red sausage and blood sausage.” (Ref 15. *Luther’s Works, Vol. 41 (Church and Ministry III)*, edited by Eric W. Gritsch, p. 28)

In the nineteenth century Andrew Fuller, viewed as “perhaps the most eminent and influential of Baptist theologians,” wrote concerning the Genesis 9:3, 4 prohibition on blood: “This, being forbidden to Noah, appears also to have been forbidden to all mankind; nor ought this prohibition to be treated as belonging to the ceremonies of the Jewish dispensation. It was not only enjoined before that dispensation existed, but was enforced upon the Gentile Christians by the decrees of the apostles, Acts XV. 20. . . . Blood is *the life*, and God seems to claim it as sacred to himself.” (Ref 16. *The Complete Works of the Rev. Andrew Fuller (1836)*, p. 751)

Might a Christian claim that the exercise of what some call “Christian liberty” should allow him to ignore this prohibition on blood? In his book *The History of the Christian Church*, clergyman William Jones (1762-1846) replies: “Nothing can be more express than the prohibition, Acts XV. 28, 29. Can those who plead their ‘Christian liberty’ in regard to this matter point us to any part of the Word of God in which this prohibition is subsequently annulled? If not, may we be allowed to ask, ‘By what authority, except his own, can any of the laws of God be repealed?’” —P. 106.

*The American Surgeon* correctly commented: “In general, refusing medical care is not tantamount to ‘suicide.’ *Jehovah’s Witnesses seek medical attention but refuse only one facet of medical care*. Refusal of medical care or parts thereof is not a ‘crime’ committed on oneself by an overt act of the individual to destroy, as is suicide.” (Italics added.) (Ref 17. *The American Surgeon*, July 1968, p. 542)

Professor Robert M. Byrn pointed out in the *Fordham Law Review* that ‘rejecting lifesaving therapy and attempted suicide are as different in law as apples and oranges.’ (Ref 18. *Fordham Law Review*, Vol. 44, 1975, pp. 23, 24)

Addressing a medical conference, Dr. David Pent of Arizona observed: “Jehovah’s Witnesses feel that, should they die because of their refusal to receive a blood transfusion, they are dying for their beliefs in much the same way that the early religious martyrs did centuries ago. If this is passive medical suicide, there are several physicians in the audience right now who are smoking cigarettes, and that probably constitutes just as passive a suicide.” (Ref 19. *American Journal of Obstetrics and Gynecology*, June 1, 1968, p. 395)

A booklet produced by the American Medical Association explains: “The patient must be the final arbiter as to whether he will take his chances with the treatment or operation recommended by the doctor or risk living without it. Such is the natural right of the individual, which the law recognizes.” “A patient has the right to withhold his consent to lifesaving treatment. Accordingly, he can impose such terms, conditions, and limitations as he may desire upon his consent.” (Ref 20. *Medicolegal Forms with Legal Analysis (1976)*, pp. 24, 38)

Dr. jur. H. Narr of Tübingen, Germany, stated: “The right and the duty of the physician to heal is limited by man’s basic freedom of self-determination respecting his own body. . . . The same is true for other medical intervention, hence also for refusal of blood transfusion.” (Ref 21. *Medical Tribune* (in German), March 19, 1976, p. 30)

Should this mean that “preserving life” comes before any and all principles? In answer, Norman L. Cantor, Associate Professor at Rutgers Law School, pointed out: “Human dignity is enhanced by permitting the individual to determine for himself what beliefs are worth dying for. Through the ages, a multitude of noble causes, religious and secular, have been regarded as worthy of self-sacrifice. Certainly, most governments and societies, our own included, do not consider the sanctity of life to be the supreme value.” (Ref 22. *Rutgers Law Review*, Vol. XXVI, 1973, p. 244)

Dr. D. N. Goldstein wrote in *The Wisconsin Medical Journal*: “Doctors taking this position have denied the sacrifices of all the martyrs that have glorified history with their supreme devotion to principle even at the expense of their own lives. For those patients who choose certain death rather than violate a religious scruple are of the same stuff as those who paid with their lives for faith in God or who went to the stake rather than accept [forced] baptism. . . . Ours is the duty to save life but we may well question whether we do not also have a duty to safeguard integrity and preserve the few gestures of personal authenticity that continue to occur in an increasingly regimented society. . . . No doctor should seek legal assistance to save a body by destroying a soul. The patient’s life is his own.” (Ref 23. *The Wisconsin Medical Journal*, August 1967, p. 375)

Dr. William P. Williamson at the First National Congress on Medical Ethics and Professionalism: “Certainly, the physician’s first thought must be the welfare of the patient. Since *life is a gift of the Creator to the individual, the primary decision rightfully belongs to the patient*, because the patient is the custodian of that gift. . . . The physician should treat the patient within the dictates of the patient’s religion, and not force his own religious convictions upon the patient.” (Italics added.) (Ref 24. *The Journal of the American Medical Association*, September 5, 1966, pp. 794, 795)

Professor Byrn wrote in *Fordham Law Review*: “...I do not mean that the doctor is bound by the patient’s choice to do something contrary to the doctor’s conscience. ... I do mean that the patient is not bound by the doctor’s conscience to do something contrary to the patient’s choice, and consequently the doctor may have the right and choice to do nothing. *The law of informed consent would be rendered meaningless if patient choice were subservient to conscientious medical judgment.*” (Italics added.) (Ref 25. *Fordham Law Review*, Vol. 44, 1975, p. 29)

In his article “Emergency Surgical Procedures in Adult Jehovah’s Witnesses,” Dr. Robert D. O’Malley commented: “The patient’s refusal to accept blood transfusion should not be used as an excuse for abandonment by the medical profession.” (Ref 26. *The Journal of Abdominal Surgery*, June 1967, p. 160)

What, then, could a doctor do? Dr. J. K. Holcomb stated in a medical journal editorial: “No doubt, we, as physicians, feel frustrated, even angered, when an obstinate patient refuses to accept what we would consider the preferred regimen of therapy. But, should we honestly feel

this way when the patient cites a religious belief as the basis for his reluctance to accept specific treatment? If we are honest with ourselves, we will admit that we settle for something less than ideal treatment with many patients in our day-to-day practice. ... If we can do this with respect to our medical convictions, shouldn’t we likewise be willing to do the best we can when a patient’s convictions, particularly religious ones, prevent our offering what we would consider the desired form of therapy. Usually, patients having religious reasons for not accepting blood transfusions, etc. are aware of the medical risks involved in their decision, but are willing to accept those risks and ask only that we do our best.” (Ref 27. *The Cape County Journal*, June 1967, p. 5.)

John J. Paris, Assistant Professor of Social Ethics, pointed out: “There is great consensus in both the medical and moral communities that an individual has no moral obligation to undergo ‘extraordinary’ medical treatment. And if the patient has no moral obligation to undergo ‘extraordinary’ treatment—common though it might be in regular practice—neither has the physician any moral obligation to provide it; nor the judge to order it.” (Ref 28. *University of San Francisco Law Review*, Summer 1975, p. 28)

Dr. Francis Wood, Chairman of the Department of Medicine, said: “I think you had a perfect right to promise. The man was going to die if you did not operate. He had some chance of getting well as a result of the operation without blood transfusion; therefore, I think you were perfectly justified in giving him the chance on his own terms.” (Ref 29. *Surgery, Gynecology & Obstetrics*, April 1959, pp. 503, 504)

The American Medical Association has recommended a form entitled “Refusal to Permit Blood Transfusion” for patients who will not accept blood because of religious beliefs. It reads: “I (We) request that no blood or blood derivatives be administered to ..... during this hospitalization, notwithstanding that such treatment may be deemed necessary in the opinion of the attending physician or his assistants to preserve life or promote recovery. I (We) release the attending physician, his assistants, the hospital and its personnel from any responsibility whatever for any untoward results due to my (our) refusal to permit the use of blood or its derivatives.” (Ref 30. *Medicolegal Forms with Legal Analysis* (1976), p. 85)

*Might a doctor or hospital be held liable if blood is not given?*

An article in the *University of San Francisco Law Review* considered this point. It explained that Judge Warren Burger, who became Chief Justice of the United States Supreme Court, said that a malpractice proceeding “would appear unsupported” in an instance where a waiver had been signed. The article continued: “The possibility of a criminal charge is even more remote. One commentator who surveyed the literature reported, ‘I have not been able to find any authority for the statement that the physician would incur . . . criminal . . . liability by his failure to force a transfusion on an unwilling patient.’ The risk seems more the product of a fertile legal mind than a realistic possibility.” (Ref 31. *University of San Francisco Law Review*, Summer 1975, pp. 27, 28)

Regarding the situation in England, *Emergencies in Medical Practice* said: “If the position has been made clear to the patient and he dies un-transfused no action can be taken against the doctor for no patient is obliged to preserve his life by the use of special or extraordinary measures.” (Ref 32. *Emergencies in Medical Practice* (1971), edited by C. Allan Birch, p. 564)

Since Jehovah's Witnesses willingly accept responsibility for their decision, doctors are legally and in fact morally relieved of any obligation to insist on blood. And this is how many ethical and sincere physicians prefer it to be. "One cannot warn too urgently against a weakening of the human right of self-determination, including that of the patient," wrote surgeon G. Haenisch of Hamburg, Germany. "A grant of authority for the physician to undertake a treatment that he deems right though it be against the will of the patient is to be uncompromisingly rejected."—*Deutsche Medizinische Wochenschrift*. (Ref 33. *Deutsche Medizinische Wochenschrift*, December 19, 1975, p. 2622)

Writing in the *New York State Journal of Medicine*, Dr. Bernard Garner and his associates stressed this point. They acknowledged that sometimes a doctor has let a Witness patient become unconscious and then given him blood, perhaps thinking 'What he doesn't know won't hurt him.' But they concluded emphatically: "Although the motive might be altruistic, this would be most distasteful ethically." (Ref 34. *New York State Journal of Medicine*, May 1976, p. 766)

Why this is so was made clear by Marcus L. Plante, Professor of Law, University of Michigan Law School. He wrote that "the physician has a fiduciary relationship [one founded on trust] to his patient and owes an absolute obligation never to mislead the patient by words or silence as to the nature and character of the medical procedure he proposes to undertake." (Ref 35. *Fordham Law Review*, Vol. 36, 1968, p. 651)

Furthermore, in some localities a doctor's promising not to give blood and then underhandedly doing so is legally wrong. For example, in West Germany's *Medical Tribune* it was pointed out that "nothing is changed when the patient becomes unconscious." This is so because 'refusal to accept a blood transfusion, once expressly stated by a competent patient, is also valid in the event he becomes unconscious.' (Ref 36. *Medical Tribune* (in German), March 19, 1976, p. 30)

Underscoring the matter more emphatically, the Supreme Court of Kansas declared: "... Each man is considered to be master of his own body, and he may, if he be of sound mind, expressly prohibit the performance of life-saving surgery, or other medical treatment. A doctor might well believe that an operation or form of treatment is desirable or necessary but the law does not permit him to substitute his own judgment for that of the patient by *any form of artifice or deception*." (Italics added.) (Ref 37. *Natanson v. Kline et al*, 186 Kan. 393, 350 P.2d 1093, 1104.

In this regard, Dr. A. D. Kelly, Secretary of the Canadian Medical Association, wrote that "parents of minors and the next of kin of unconscious patients possess the right to interpret the will of the patient and that we should accept and respect their wishes. . . . I do not admire the proceedings of a moot court assembled at 2:00 a.m. to remove a child from his parent's custody." (Ref 38. *Canadian Medical Association Journal*, February 18, 1967, p. 432)

The journal *Forensic Science*: "Are we then to assume that the courts are willing to assign a different religion to the children than that of their parents, when statistics show that the overwhelming majority of children are reared and indeed follow the same religious denomination as their parents? Would this also not be as much an infringement of religious rights of the children by the courts as those rights which the court is trying to protect for the adults under the First Amendment [of the Constitution] by denying the transfusion over the

adult's objections? Are the courts not assigning in essence a religion to the children if they deny transfusions on religious grounds for adults and permit them for the children of the same adults?" (Ref 39. *Forensic Science*, July 1972, p. 135)

A.D. Farr, "The over-ruling in respect of a minority religious belief is extended to over-ruling the whole principle of an adult being allowed to accept or reject a particular form of medical treatment ... The State is gradually taking over the function of making decisions for the individual. It is in this way that free countries cease to be free and become totalitarian. It was indeed by the taking-over of the German children into the Hitler Youth movement that freedom and privacy were finally suppressed in Nazi Germany. This is not mere fanciful speculation. Freedom is a precious and comparatively rare possession, to be jealously guarded in those countries where it exists. Any one encroachment on individual liberty is one too many." (Ref 40. *God, Blood and Society* (1972), by A. D. Farr, p. 115)

A council of judges in the United States of America wrote in "Guides to the Judge in Medical Orders Affecting Children": "If there is a *choice* of procedures—if, for example, the doctor recommends a procedure which has an 80 per cent chance of success but which the parents disapprove, and the parents have no objection to a procedure which has only a 40 per cent chance of success—the doctor must take the medically riskier but parentally unobjectionable course." (Ref 41. *Crime and Delinquency*, April 1968, p. 116)

In a *Texas Medicine* editorial, Dr. Grant F. Begley wrote that "when I treat an illness that affects the body, mind, and spirit of the person in my care, it is what *he* believes that is important. His beliefs, not mine, are the ones that cause him to feel fear, doubt, and guilt. If my patient does not believe does not believe in blood transfusions, what I think about them does not matter." (Ref 42. *Texas Medicine*, December 1970, p. 25)

Treating the "whole man" is both humane and practical in view of the tragic results that can come from doing otherwise. "The perceptive physician," urged Dr. Melvin A. Casberg in *The Journal of the American Medical Association*, "must be aware of these separate but interrelated facets of the body, the mind, and the spirit, and appreciate that healing the body in the face of a broken mind or spirit is but a partial victory, or even an ultimate defeat." (Ref 43 *The Journal of the American Medical Association*, July 3, 1967, p. 150)

The conclusion reached by 800 European doctors convened in Paris was that "blood is too often considered as a 'miracle tonic' given the patient whether he needs it or not." These doctors particularly disapproved of single-unit transfusions, which they said are "useless 99 times out of 100." (Ref 44. *Ouest-France*, March 10, 1975)

A study in the United States suggested that 72 percent of the transfusions administered in some, places are 'unnecessary or questionable.' (Ref 45. *Drugs* (1973), Vol. 6, p. 130)

Dr. Rune Eliasson of Stockholm, Sweden, ventured the opinion "that many physicians, perhaps misled by the power of the word over the mind, have allowed themselves to be too easily blinded by the halo they themselves have placed around the transfusion of blood so that the advantages and disadvantages of this form of treatment cannot be seen in their proper perspective." (Ref 46. *Obstetrik och gynekologi* (1962), edited by Carl Gemzell, p. 206)

Doctors know that blood is extremely complex. This is manifested even in just the matter of blood types. Reference works state that there are some "fifteen to nineteen known blood group systems. Regarding only one of these, the Rh blood group system, a recent book about blood said that "at the present time nearly three hundred different Rh types may theoretically be recognised." (Ref 47. *God, Blood and Society* (1972), by A. D. Farr, p. 32)

Another facet of the complexity and uniqueness of each one's blood is the variety of antibodies in it. At a meeting of scientists in Zurich, Switzerland, a group of English criminologists pointed out that the antibodies are so diverse that the blood of each person might be said to be specific and unique. Scientists hope to be able to "reconstruct from a bloodstain the personality image of every person who leaves behind a trace of blood." (Ref 48. *Die Welt*, October 14, 1975)

The fact that blood is an extremely complex tissue that differs from person to person has a significant bearing on blood transfusion. This is a point Dr. Herbert Silver, from the Blood Bank and Immunohematology Division of the Hartford (Connecticut) Hospital, recently made. He wrote that, considering only those blood factors for which tests can be performed, "there is a less than 1 in 100,000 chance of giving a person blood exactly like his own." (Ref 49. *The Journal of the American Medical Association*, April 12, 1976, p. 1611.

*A frank appraisal of the facts proves that blood transfusion must honestly be regarded as a procedure involving considerable danger and even as potentially lethal.* (Ref 50. *Clinical Hematology* (1974), by Professor Maxwell M. Wintrobe, p. 474)

Dr. C. Ropartz, Director of the Central Department of Transfusions in Rouen, France, commented that "a bottle of blood is a bomb." Since the dangerous results may not appear until some time has passed, he added, "furthermore, it may also be a time bomb for the patient." (Ref 51. *Le Concours Medical*, April 1, 1972, p. 2598)

A United States Government publication carried an article on the dangers of blood and said that "... donating blood can be compared to sending a loaded gun to an unsuspecting or unprepared person. ... Like the loaded gun, there is a safety lever or button governing blood transfusions. But, how many persons have died from gun shot wounds as the result of believing the lever was on 'safe'?" (Ref 52. *Oasis*, February 1976, pp. 23, 24)

For the reality of the dangers is often brought home to physicians. "No biologic product," wrote Winfield S. Miller in *Medical Economics*, "has a greater potential for fatal mistakes in medical practice than blood. More than one doctor has learned to his sorrow that every bottle of blood in the blood banks is a potential bottle of nitroglycerin." (Ref 53. *Medical Economics*, December 11, 1967, p. 96)

Stanford University's Dr. J. Garrott Allen, a leading expert on the blood problem, estimated that blood transfusions kill at least 3,500 Americans each year and injure another 50,000. (Ref 54. *The National Observer*, January 29, 1972, p. 1)

But there is strong reason to believe that this actually is an *underestimation*. For instance, the *Southern Medical Journal* recently suggested that the estimate that "between 3,000 and

30,000 deaths attributable to transfusions” is probably a conservative estimate. **(Ref 55. *Southern Medical Journal*, April 1976, p. 476)**

At a meeting of the American College of Surgeons, Dr. Robert J. Baker reported that the ‘danger of adverse effects from blood is far greater than previously believed with one out of 20 patients developing a reaction.’ How many persons realize this? Showing why that report should concern us all, Dr. Charles E. Huggins, associate director of a large blood bank, added: “The report is frightening but realistic because the same problems are facing every institution [throughout] the world.” **(Ref 56. *Chicago Tribune*, October 10, 1969, p. 2)**

In a recent issue of the journal *Surgery*, “major new problems related to massive transfusion have been proposed, problems hardly or not at all considered as recently as five years ago, yet potentially overshadowing almost all the problems that haunted the consciousness of the blood bankers, clinicians, and investigators for the first 40 years of clinical blood banking.” **(Ref 57. *Surgery*, February 1974, pp. 274, 275)**

The textbook *Hematology* contains this table: **(Ref 58. *Hematology* (1975), by Professor James W. Linman, p. 991)**

Types of Transfusion Reactions

Febrile	Cardiac overload
leukocyte antibodies	Citrate intoxication
Platelet antibodies	
Pyrogens	Potassium Intoxication
Allergic	Abnormal bleeding
Hemolytic	Incompatible transfusion
(incompatible transfusion)	Massive transfusion
Transmission of disease	Isosensitization
Serum hepatitis	Transfusion hemosiderosis
Malaria	Miscellaneous
Syphilis	Thrombophlebitis
Cytomegalovirus infection	Air embolism
Gross bacterial contamination	Injection of foreign material

The table presents first some of the “immediate” reactions. A febrile or fever-producing reaction can usually be treated successfully. However, as Professor of Medicine James W. Linman reports, “severe febrile reactions occur and may be sufficiently stressful to be life-threatening in certain acutely ill patients.” **(Ref 58. *Hematology* (1975), by Professor James W. Linman, p. 991)**

Mismatched blood brings on a hemolytic reaction, involving rapid destruction of red blood cells, which can result in kidney failure, shock and death. Hemolytic reactions are especially dangerous to patients under anesthesia, for the symptoms may not be noticed until it is too late. **(Ref 59. *Journal of Forensic Sciences*, January 1969, p. 87)**

"Transmission of disease" is also listed among possible reactions. Is there any substantial danger from this quarter? Hepatitis B (serum hepatitis) is a particularly hazardous complication of blood transfusions. The blood of a donor, without its being suspected, may contain the hepatitis virus that can damage the health of a person receiving the blood, or even kill him. The more transfusions someone gets, the greater his likelihood is of contracting serum hepatitis. Yet it does not take a great deal of blood. Less than a drop will do; you can contract the disease from as little as one millionth of a milliliter of infected blood." (Ref 60. *The Gift Relationship* (1971), by Professor Richard M. Titmuss, p. 142)

An estimate that often appears in medical journals is that one percent, or one person out of one hundred, contracts hepatitis following a transfusion. (Ref 61. *Journal of Hygiene*, October 1974, p. 173; *Southern Medical Journal*, April 1976, p. 477)

Drs. John B. Alsever and Peter Van Schoonhoven wrote in *Arizona Medicine*: "Its incidence over the past ten to fifteen years in large community blood centers has been about 1% in reported retrospective studies of clinically evident disease. However, when one studies transfused patients prospectively in the laboratory at 2- to 4-week intervals, one finds up to a ten times greater incidence of infection." (Ref 62. *Arizona Medicine*, April 1974, p. 263)

It has often been said that in the United States there are 30,000 cases of posttransfusion hepatitis annually, with 1,500 to 3,000 deaths. (Ref 63. *Annals of the New York Academy of Sciences*, January 20, 1975, p. 191)

Information provided by the government's Center for Disease Control points to a conservative figure for hepatitis B cases as being 200,000 or more annually. (Ref 64. *The American Journal of the Medical Sciences*, September-October 1975, pp. 276, 281; *Morbidity and Mortality Weekly Report*, May 7, 1976, p. 3; *Inspection News*, November-December 1972, p. 18)

Authorities admit that about 10 to 12 percent of those contracting serum hepatitis from transfusions die as a result. (Ref 65. *Scandinavian Journal of Infectious Diseases*, Vol 6, 1974, p. 286)

With persons over forty years of age, the mortality rate is 20 percent—one out of five. (Ref 66. *Hematology* (1975), by Professor James W. Linman, p. 994)

In patients over the age of sixty, about half die from the hepatitis. (Ref 67. *The Gift Relationship* (1971), by Professor Richard M. Titmuss, p. 147)

*The Journal of Legal Medicine* acknowledged that "none of the now known methods of preserving blood possess any antiviral properties. Any modality that will destroy or even attenuate the virus of hepatitis will also destroy the blood or blood fraction." (Ref 68. *The Journal of Legal Medicine*, June 1976, p. 19)

Dr. M. Shapiro, of the South African Blood Transfusion Service, recently pointed out that "even with the most sensitive tests perhaps only 1 in 8 or even fewer cases of post-transfusional hepatitis are avoidable by laboratory screening alone of donor bloods." (Ref 69. *South African Medical Journal*, January 24, 1976, p. 107)

"Blood should be considered a dangerous medicine, and should be used with the same caution as, for example, morphine." (Ref 70. *Die Welt*, December 9, 1974)

The American Medical Association advised that "with the increase in global travel and the return of servicemen from endemic areas, there has been an increase in the incidence of malaria in recipients of blood transfusion." (Ref 71. *General Principles of Blood Transfusion* (1973), p. 15)

In tropical areas there are a number of other diseases that can be transmitted by blood transfusions, such as Chagas' disease (having a fatality rate of one out of ten), African trypanosomiasis (African sleeping sickness), yaws and filariasis. (Ref. 72. *Tropical Diseases Bulletin*, September 1972, pp. 828, 848)

Certain types of bacteria can multiply even in chilled blood, posing a grave threat to anyone later receiving that blood. Though fewer patients experience this complication than, say, serum hepatitis, the results are tragic for those who do. The mortality rate is between 50 and 75 percent. (Ref 73. *Hematology* (1975), by Professor James W. Linman, p. 995)

What does the future hold as to dangers associated with blood transfusions? "The list of transmitted diseases," reports Dr. John A. Collins of the Washington University School of Medicine, "will vary and will certainly grow, and considerable uneasiness may occur as more tumor-related viruses are identified in human blood." (Ref 74. *Surgery*, February 1974, p. 275)

*Accordingly, many hospitals now require a patient to sign a waiver or agreement that he will not hold the doctor or hospital liable for injury resulting from a blood transfusion.* (Ref 75. *Medicolegal Forms with Legal Analysis* (1976), p. 83)

As is well known, in cases of elective surgery, doctors may 'build up the patient's blood' before and afterward, such as with amino acids and oral or injectable iron compounds (Ref 76. *The Journal of Thoracic and Cardiovascular Surgery*, July 1974, p. 3) (\*Studies indicate that by means of iron therapy red-cell production can be increased to two to four times the normal rate. Ref. 77. *Mayo Clinic Proceedings*, November 1976, p. 725); this can lessen any need for transfusion.)

Deep hypothermia (lowering the patient's body temperature) has proved advantageous in minimizing blood loss during surgery, even on infants. (Ref 78. *Medical World News*, December 4, 1970, p. 7)

In the *American Journal of Obstetrics and Gynecology*, one doctor who has operated on many of Jehovah's Witnesses said: "There is no doubt that the situation where you are operating without the possibility of transfusion tends to improve your surgery. You are a little bit more aggressive in clamping every bleeding vessel." (Ref 79. *American Journal of Obstetrics and Gynecology*, June 1, 1968, p. 395)

Some facts presented by Professor James W. Linman in *Hematology* serve as a fine basis for evaluating the answer: "Blood is not a tonic or stimulant; it will not promote wound healing or suppress an infection; and its oxygen-carrying capacity is rarely, if ever, a limiting factor in surgery. *A transfusion serves only to augment total blood volume, to enhance the oxygen-carrying capacity of the blood, and as a source of normal plasma constituents.*" (Italics added.) (Ref 80. *Hematology* (1975), by Professor James W. Linman, p. 985)

At a congress of the Medical Association of South Africa, a blood transfusion specialist explained that a person might lose up to 1.5 liters (over three pints) of blood and still have over 60 percent of his red cells, (Ref 81. *South African Medical Journal*, January 24, 1976, p. 107) an amount adequate for tissue nourishment. But the person needs more fluid in his vessels to keep the red blood cells circulating.

The British journal *Anaesthesia* reported that nonblood solutions do this more effectively than do transfusions of blood, for they do not reduce cardiac efficiency, a not uncommon complication accompanying blood transfusion. The article said that on occasions when apparently adequate amounts of whole blood failed to produce the desired result in a case of trauma, using nonblood solutions often produced dramatic improvement. Hence, the article observed: "Even if an adequate supply of whole blood is available, however, it is doubtful if it is the fluid of choice for the initial treatment for the rapid transfusion of grossly hypovolaemic patients [those who have lost much blood]. (Ref 82. *Anaesthesia*, July 1968, pp. 395, 396)

Controlled clinical study has indicated that a person with 'a large blood volume may tolerate the loss of as much as two liters [2,000 cc] of whole blood' without requiring anything besides replacing the fluid lost with nonblood solutions. (Ref 83. *Archives of Surgery*, January 1969, p. 52)

Doctors generally take the position that 'under sophisticated conditions a hemoglobin of 10.3 to 10.5 grams is regarded as the safe lower value for routine surgery.' (Ref 84. *Anaesthesia*, July 1968, p. 413; *Mayo Clinic Proceedings*, November 1976, p. 726)

Much of a person's hemoglobin is in reserve for use during strenuous exertion; hence, a bedfast patient often is comfortable with as little as 5 or 6 grams. (Ref 85. *Postgraduate Medicine*, November 1959, p. A44)

M. Keith Sykes, Professor of Clinical Anesthesia at the University of London, recently pointed out: "Although most centres choose a value of 9 or 10 g per cent as the dividing line between acceptance and refusal for elective operations, it must be emphasized that there is no conclusive evidence that values above this level are 'safe' or that values below this level impart an extra risk to surgery. It therefore seems unreasonable to choose an arbitrary figure as an acceptable haemoglobin level." (Ref 86. *Canadian Anaesthetists' Society Journal*, January 1975, p. 8)

Likewise, Dr. Jeffrey K. Raines, of Massachusetts General Hospital, stated that "we can let the hematocrit get much lower than we had thought. We used to think a patient had to have a hemoglobin of 10, but we now know that is not really so." (Ref 87. *RN Magazine*, May 1975, p. 38)

Dr. Ricardo Vela of a department of anesthesia in Madrid, Spain, had experience in this connection with patients who are Jehovah's Witnesses. He wrote that very low hemoglobin levels that formerly would have been considered as forbidden "were surprisingly well tolerated by the patients." (Ref 88. *Bibliotheca Haematologica*, "Intentional Hemodilution," No. 41, 1975, p. 270)

A recent editorial in *Anaesthesia* made this significant point: "It is worth remembering also that the haemoglobin of stored, citrated red cells is not fully available for the transfer of oxygen to the tissues for some 24 hours after transfusion ...; rapid blood transfusion must therefore be regarded primarily as a mere volume expander in the initial stages." (Ref 89. *Anaesthesia*, March 1975, p. 150)

Researchers at Ohio State University found that the reason for this is that chemical changes occur in stored blood. Their investigation showed that blood stored more than ten days "does not improve or may even worsen oxygen delivery immediately after transfusion." And they found that the oxygen delivery was still below normal twenty-four hours later. (Ref 90. *Columbus, Ohio, The Dispatch*, August 31, 1972, p. 1B)

Probably the most widely available and most frequently used emergency plasma replacement is simple *saline solution* (0.9%). It is easy to prepare, inexpensive, stable and chemically compatible with human blood. (Ref 91. *Anaesthesia*, July 1968, pp. 418, 419)

*Ringer's lactate* (Hartmann's) is an additional electrolyte or crystalloid solution that has been successfully used in cases of massive burns and in surgery where patients have lost up to 66 percent of the fluid volume of their blood. (Ref 92. *Annals of the New York Academy of Sciences*, August 14, 1968, p. 905; *The Journal of the American Medical Association*, March 29, 1971, p. 2077)

Another approach is to replace lost blood with colloids such as *dextran*. That is a clinical sugar solution that has proved valuable both in surgery and in treating burn cases and shock. (Ref 93. *Blood Transfusion in Clinical Medicine* (1972), by Professor P. L. Mollison, pp. 150, 153)

Sometimes it is combined with a buffered salt solution so as to draw on the best properties of each. *Haemaccel* and *hydroxyethyl starch* solution have also been employed with good results in various operative situations as plasma volume expanders. (Ref 94. *Surgical Clinics of North America*, June 1975, p. 671) \* PVP (polyvinylpyrrolidone) is also still used in some lands.

Each of these fluids has its own properties and merits. But regarding disaster situations *Anaesthesia* commented: "Initially in the acute stage the exact fluid chosen, provided that it is not positively harmful, is relatively unimportant. Later, once the circulatory volume has been expanded, the specific requirements for a particular case must be taken into consideration." (Ref 95. *Anaesthesia*, July 1968, p. 416)

Does this mean that these fluids are only for emergencies? Not at all. Regarding "all major types of operation," surgeons at the University of Kentucky College of Medicine wrote: "A hundred patients each lost over 1,000 ml of blood while undergoing surgery and received two to three times that volume of Hartmann's solution. Postoperative mortality and morbidity were not affected by the lack of blood in the replacement regimen. ... Despite the persistent tradition that blood is the only effective replacement for blood loss, the practice of using saline solutions for part or all of blood substitution has gained ground in many centers." (Ref 96. *The Journal of the American Medical Association*, February 5, 1968, pp. 399, 401)

There are numerous other advantages. "Non-biological substitutes for blood," wrote Professor E. A. Moffitt of Canada, "can be manufactured in large quantities and stored for long periods of time ... The risks of blood transfusion are the advantages of plasma substitutes: avoidance of bacterial or viral infection, transfusion reactions and Rh sensitization." (Ref 97. *Canadian Anaesthetists' Society Journal*, January 1975, p. 12)

There is another noteworthy benefit from using plasma expanders. When human blood is stored, chemicals must be added to prevent coagulation. Later when this blood is given to a patient, the additives can interfere with his own blood's natural ability to coagulate; continued loss of blood can result. Heart surgeon Dr. Melvin Piatt has called attention to the fact that this problem is avoided when "a neutral substance" such as Ringer's lactate solution rather than stored blood is used. (Ref 98. *The Elks Magazine*, August 1976, p. 14) have often found the experience revealing.

In the past, massive amounts of blood were normally used. But the surgical team headed by Dr. Denton Cooley at the Texas Heart Institute decided to try operating on Jehovah's Witnesses. Because the doctors could not prime the needed heart-lung pump with blood or administer blood during or after surgery, they employed nonblood plasma expanders. Dr. Cooley reports: "We became so impressed with the results on the Jehovah's Witnesses that we started using the procedure on all our heart patients. We've had surprisingly good success and used it in our [heart] transplants as well." He added: "We have a contract with the Jehovah's Witnesses not to give a transfusion under any circumstances. The patients bear the risk then, because we don't even keep blood on hand for them." (Ref 99. *The San Diego Union*, Sunday, December 27, 1970, p. A-10)

What have been the long-term results of 'bloodless heart surgery' on adults and children? Dr. Jerome H. Kay of California wrote: "We have now done approximately 6,000 open-heart operations at the Saint Vincent's Hospital in Los Angeles. Since we have not been using blood for the majority of patients, it is our impression that the patients do better." (Ref 100. *The Journal of the American Medical Association*, December 3, 1973, p. 1231)

A Canadian study provided specific details, revealing that when nonblood fluids, such as dextran and Ringer's solution, were used instead of blood "the number of deaths dropped from 11 per cent to 3.8." (Ref 101. *The Toronto Star*, November 22, 1975, p. A8)

Under the title “Major Surgery in Jehovah’s Witnesses” a group of New York doctors related a number of cases involving extensive surgery, such as the total removal of cancerous organs, and explained that by employing precise surgical techniques these procedures can be done without blood. (Ref 102. *New York State Journal of Medicine*, May 1976, pp. 765, 766)

Other procedures successfully performed without administering blood include radical head and neck operations, extensive abdominal surgery and hemipelvectomies (amputation of leg and hip). (Ref 103. *The Journal of the American Medical Association*, February 5, 1968, p. 399)

After removing a large brain aneurysm on a Witness, Dr. J. Posnikoff took exception to the “current opinion of most neurosurgeons that transfusion of blood is absolutely essential” for such brain surgery. He urged other surgeons “not to routinely deny major operation to those who may be in desperate need but cannot morally accept blood transfusion.” (Ref 104. *California Medicine*, February 1967, pp. 124, 127)

The conclusion reached by Dr. Philip R. Roen in “Extensive Urologic Surgery Without Blood Transfusion” was: “Our experiences with Jehovah’s Witnesses requiring operative procedures has demonstrated to us that blood transfusions are not necessarily essential even when hemoglobin levels are low—as low as 5 Gm. per 100 ml.... The stand of Jehovah’s Witnesses in refusing blood transfusion during necessary major and extensive operative procedures provides a considerable problem and challenge for the urologist. Such patients cannot and must not be abandoned because of their religious beliefs. We have not hesitated to perform any and all indicated surgical procedures in the face of proscribed blood replacement.” (Ref 105. *New York State Journal of Medicine*, October 15, 1972, pp. 2526, 2527)