

DRUG TREATMENT IN SPECIAL RISK GROUPS

Different people tend to respond in different ways to drug treatment. Taking the same drug, one person may suffer adverse effects while another does not. However, doctors know that certain people are always more at risk from adverse effects when they take drugs; the reason is that in those people the body handles drugs differently, or the drug has an atypical effect. Those people at special risk include infants and children, women who are pregnant or breast-feeding, the elderly, and people with long-term medical conditions, especially those who have impaired liver or kidney function.

The reasons that such people may be more likely to suffer adverse effects are discussed in detail on the following pages. Others who may need special

attention include those already taking regular medication who may risk complications when they take another drug. Drug interactions are discussed more fully on p.16.

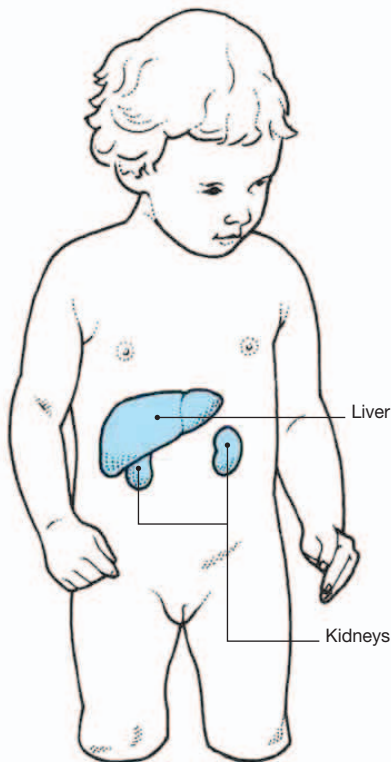
When doctors prescribe drugs for people at special risk, they take extra care to select appropriate medication, adjust dosages, and closely monitor the effects of treatment. If you think you may be at special risk, be sure to tell your doctor in case he or she is not fully aware of your particular circumstances. Similarly, if you are buying over-the-counter drugs, you should ask your doctor or pharmacist if you think you may be at risk of experiencing any possible adverse effects or hazardous drug interactions.

INFANTS AND CHILDREN

Infants and children need a lower dosage of drugs than adults because children have a relatively low body weight. In addition, because of differences in body composition and the distribution and amount of body fat, as well as differences

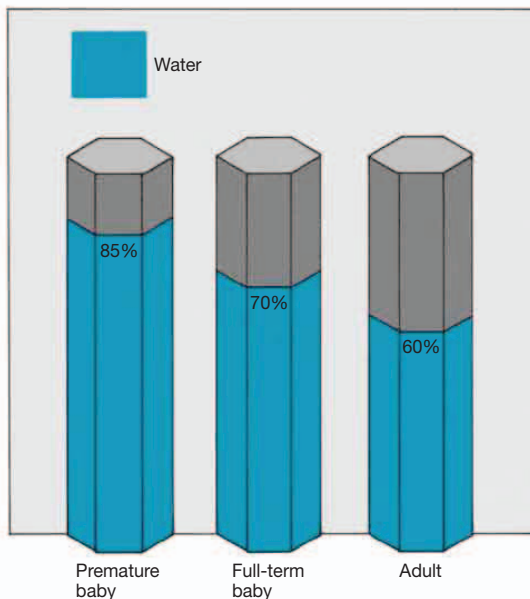
in the state of development and function of organs such as the liver and kidneys at different ages, children cannot simply be given a proportion of an adult dose as if they were small adults. Dosages need to be calculated in a more complex way,

taking into account the child's age and weight. While newborn babies often have to be given very small doses of drugs, older children may need relatively large doses of some drugs compared to the adult dosage.



The liver
The liver's enzyme systems are not fully developed when a baby is born. This means that drugs are not broken down as rapidly as in an adult, and may reach dangerously high concentrations in the baby's body. For this reason, many drugs are not prescribed for babies or are given in very reduced doses. In older children, because the liver is relatively large compared to the rest of the body, some drugs may need to be given in proportionately higher doses.

The kidneys
During the first six months, a baby's kidneys are unable to excrete drugs as efficiently as an adult's kidneys. This may lead to a dangerously high concentration of a drug in the blood. The dose of certain drugs may therefore need to be reduced. Between one and two years of age, kidney function improves, and higher doses of some drugs may then be needed.



Body composition
The proportion of water in the body of a premature baby is about 85 per cent of its body weight, that of a full-term baby is 70 per cent, and that of an adult is only 60 per cent. This means that drugs that stay in the body water will not be as concentrated in an infant's body as in an adult's, unless a higher dose relative to body weight is given.