

almost invariably the use of the drug will be extended beyond its original purpose both by the medical profession and by the lay people who so glibly recommend drugs to their friends. They think they know a great deal better than doctors know what is good for their friends to take.

Senator NELSON. In your article and/or your testimony, you refer to the fact that phocomelia did appear in tests using thalidomide at some stage in rabbits and in some other animals. From your checking in Germany, was there a failure here of proper testing of the drug to find this out? What kind of testing was done?

Dr. TAUSSIG. Well, the German laws are very much more lax than ours. There is extremely little animal testing done. Of course, at that time it was not the type of reaction they were looking for. They had not thought of considering this.

Really they felt it was a sleeping tablet, and when at first they tried it in animals and the drug didn't make any animals sleep, and so the company thought it must be something that will be good for epilepsy, and they sold it first as an anticonvulsant and word came back it was no good as an anticonvulsant, but it is a beautiful sleeping tablet for man, so then they sold it for that.

Subsequently after the drug was suspected of causing phocomelia, it was massive doses in rabbits that finally produced the malformation. I think we learned a great deal about testing since then, and since then it has also been found that nonhuman primates do react very similarly to man, and that you can produce phocomelia in the rhesus monkey with doses relatively comparable to man, with extraordinary regularity if the drug is given at the right time.

Of course, there remains the possibility that other drugs may cause other types of injury. Now we are beginning to recognize that as the organs are developing is the time that a drug will injure the organ. Once you have a good arm, you are not going to get a medicine that is going to injure the development of that arm.

We haven't in the least answered the question of whether you can alter the metabolism of an organ, whether you can change the function of the liver or the pancreas by a drug given later in pregnancy or whether you can hurt the brain later in pregnancy, so that you can't say the only time you should test for drugs is during the first or early portion of pregnancy; it is only during early pregnancy that a drug is going to produce organ difficulties.

It is a very, very complicated question. But a lot can be done by careful testing, to have indication of whether it is safe or not, and I am sure we will learn more.

But with it all, we ought to have very careful records kept when it is first tried in man, because you can't ever say that man always reacts even like the rhesus monkey. But you can keep very careful records and not have the widespread disaster.

The later the untoward the reaction comes out, the more difficult it is to trace it to the drug. If you see it immediately after it is relatively easy; if you see it 9 months after pregnancy it is harder; if you saw it as the child reaches maturity, it would be very hard to trace back what had been taken. But if we can keep careful monitoring of this, it is going to help us a lot, and it ought to go a long way to prevent a widespread disaster.