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HEART RATE TILT RESPONSE COMPARED WITH MISSION DURATION

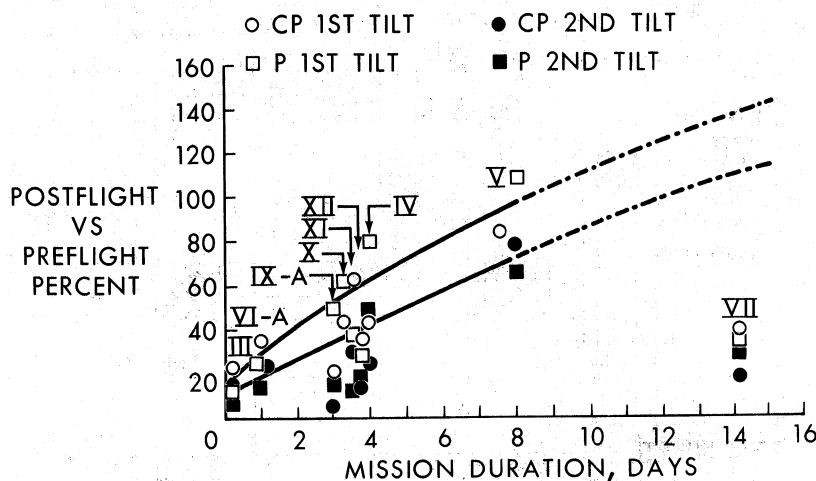


FIGURE 14

Now, there are a lot of things that account for this, like being out of the suits for awhile, having a better diet, better exercise, having a longer period of time to adapt to the environment, and all these things are active in each of these series of changes that you are going to note.

Now, we have also noted some changes in blood volume, and in the Gemini IV flight we tried to measure just plasma volume, the liquid portion of the blood (fig. 15). We do this by a radioisotope technique, and we did not directly measure red cell mass, we calculated it by packing the red cells and just calculating the red cell mass. Still we found that there was a decrease in red cell mass, this line representing a zero point, and anything below this line representing a decrease in the total blood volume, the red cell mass, and anything above it an increase, and, here, it goes to a plus or minus 20 percent.

These actual figures, in here, represent actual cc's of loss.

The important thing to get from the slide is that there was some loss in plasma volume, some loss in red cell mass, and some loss of total blood volume on the 4-day flight.

Now, we had not expected to see any loss in red cell mass, and this was an interesting thing to us, and we, therefore, decided we had better directly measure it with the radioisotope technique. We tagged the cells and we saw that we did, indeed, lose red cell mass, in fact the loss increased from 4 to 8 days, and, again, it looked like we had an increasing trend. When we went to the 14-day flight we again see this same thing happen to us. It is not continuing to increase. The red cell mass loss is not continuing to go up as flight