

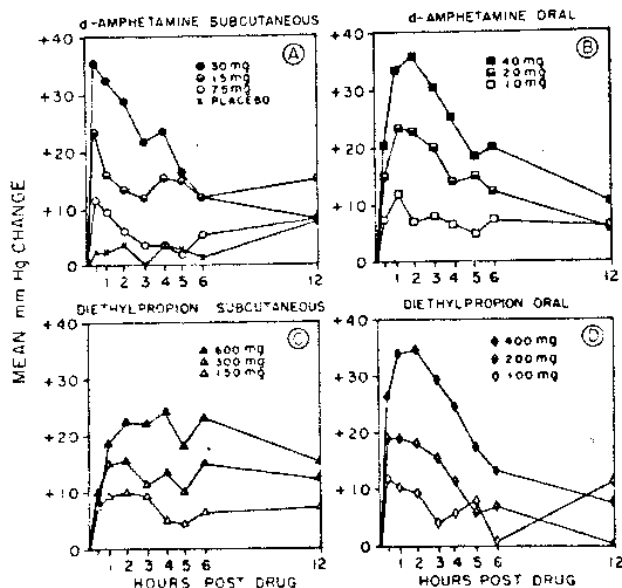


Fig. 3. Time-action curves for changes in systolic blood pressure from the mean of predrug controls following placebo condition and the administration of *d*-amphetamine subcutaneously (A), and orally (B), and diethylpropion subcutaneously (C), and orally (D). Each point represents the mean change from 9 subjects.

than *d*-amphetamine, as indicated by relative potencies (Table II) calculated from the dose-response curves shown in Fig. 2. Oral diethylpropion was $\frac{1}{6}$ to $\frac{1}{11}$ as potent as oral *d*-amphetamine. A striking contrast between diethylpropion and *d*-amphetamine was the potency difference between routes of administration for each drug. Oral *d*-amphetamine was equipotent to or slightly less potent than subcutaneous *d*-amphetamine whereas, in contrast, oral diethylpropion was twice as potent as subcutaneous diethylpropion. Subcutaneous diethylpropion can then be estimated to be $\frac{1}{10}$ to $\frac{1}{20}$ as potent as subcutaneous *d*-amphetamine.

Time-action curves for changes in systolic blood pressure (Fig. 3) indicated trends for differences in the onset of action of the four drug conditions. Subcutaneous *d*-amphetamine (Fig. 3, A) had a prompt onset of action with maximum effects at the half hour postdrug observation while subcutaneous diethylpropion (Fig. 3, C) had a slower onset of action. Relative to the

subcutaneous route, the onset of effects with oral *d*-amphetamine (Fig. 3, B) was slower with peak effects at 1 to 2 hours. Oral diethylpropion (Fig. 3, D) produced effects more promptly than subcutaneous diethylpropion (Fig. 3, C) and possibly more rapidly than oral *d*-amphetamine (Fig. 3, B).

Discussion

Diethylpropion produces a syndrome qualitatively similar to that of *d*-amphetamine as evidenced by identifications as "amphetamine" and "cocaine" responses on scales for subjective effects and euphoria, increases in blood pressure and body temperature, and decreases in caloric intake and sleep. On the other hand, relative potency calculations for these measures indicate that diethylpropion is $\frac{1}{6}$ to $\frac{1}{11}$ as potent as *d*-amphetamine when both are administered orally but $\frac{1}{10}$ to $\frac{1}{20}$ as potent when both are administered subcutaneously. Furthermore, relative potencies for concurrent measures indicate no significant