as an opiate or as a barbiturate. During chronic administration subjects liked the effects of butorphanol as measured by the chronic opiate questionnaire[2] to a lesser extent than other groups of subjects reported for various doses of morphine (Fig. 1). The pattern of responses on the symptoms from the chronic opiate questionnaire did not show significant correlation with the patterns of symptoms for various levels of morphine administration.

Table 1. Identifications by 6 subjects and observers of butorphanol from chronic questionnaires administered once daily during the period of chronic butorphanol administration (35 days).

	Subjects	Observers
Drug effect	207	210
Identified as opiate	44	210
Identified as barbiturate	170	139
Identified as marijuana	14	0
Identified as speed	1	0
Identified as LSD	1	0
Identified as thorazine	24	0

The maximum number of responses possible was 210.

Chronically administered butorphanol decreased pupil size, increased diastolic blood pressure slightly, and increased body weight and caloric intake (Fig. 2 and Table 2).

Administration of naloxone, 4 mg, and nalorphine, 40 mg, to these subjects during the 4th week of chronic administration of butorphanol precipitated an abstinence syndrome with subjects reporting typically opiate-like withdrawal and a degree of sickness (Table 3). This 40 mg dose of nalorphine did not produce any discernible subjective effects including psychotomimetic effects indicating a degree of cross tolerance between butorphanol and nalorphine.