



## **Long Term Outcome of Clients Treated in a Commercial Stop Smoking Program**

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### **Abstract**

*A follow-up study was conducted at approximately one year post-treatment of a group of clients treated at a commercial stop smoking program (Schick Smoking Centers). A sample of 327 clients was contacted from the total number of 832 clients treated in the year 1985. These clients were selected in a random systematic fashion and were contacted by telephone using a structured interview.*

*The treatment program employed five days of aversive counter-conditioning (faradic and “quick Puff”) for various smoking behaviors. It also included an educational and counseling component during the initial counter-conditioning phase and a six week support phase with weekly support groups and one counter-conditioning reinforcement treatment in the second week.*

*The clients were contacted a mean of 13.7 months after completion of treatment. The majority (55.7%) of the clients were male. Fifty-two percent of all clients achieved their goal of total abstinence from cigarettes since “graduation” from the program. The factor most predictive of success or failure was whether or not the client returned to a home containing a smoker. Of those returning to a nonsmoking home, 61.4% of the men and 60.2% of the women were successful. Of those who returned to a smoking household, 70.2% returned to smoking.*

*This study demonstrates that the treatment, process appears to be free of complications and is associated with successful outcomes in the majority of clients. Further improvement in outcome might result from simultaneous Treatment of all household smokers.*

*Keywords: Aversion Therapy, smoking treatment, commercial smoking treatment*

The Schick Smoking Program has been in existence as a commercial smoking cessation program since 1972. Approximately 100,000 clients have been treated during that time. This brief report describes the results of a recent one year outcome study.

### **Review of Literature**

Chapman, Smith, and Layden (1971) reported on the effectiveness of faradic aversion therapy in cigarette smoking cessation. Twenty-two of their twenty-three subjects achieved abstinence during treatment. Thirty-six percent had maintained continuous abstinence at the 12 month post-treatment follow-up.

Lichtenstein et al. (1973) reported that aversion therapy utilizing rapid smoking and warm, smoky air with 40 habituated smokers resulted in abstinence of all but one subject during seven treatment sessions. Twenty-one of the forty subjects (52.5%) remained abstinent at the six month follow-up. Lando (1977) utilized six consecutive days of rapid smoking aversion therapy sessions followed by seven booster sessions over two months with 17 chronic smokers. He added an attendance-contingent refundable deposit, behavioral contracting and group support

sessions. Lando found that 100% of the subjects achieved abstinence during the week of aversion therapy and that 76% maintained abstinence at the six month post-treatment follow-up.

Lichtenstein and Rodriguez (1977) determined through telephone interviews with participants, in four rapid smoking/blown smoky air aversion treatment protocols for dependent smokers, that 34% reported abstinence at 2-6 year post-treatment follow-up. Lando and McGovern (1982) reported a 46% abstinence rate for 24 subjects at 12-month, 24-month, and 48-month post-treatment follow-up intervals after participating in an aversion-and-support smoking cessation protocol. They concluded that, for such treatment, the relapse curve appeared to level off by one-year post-treatment. At that point, subjects who resumed smoking were replaced by an equal number of other subjects who resumed abstinence.

Hall, Sachs, and Hall (1979) reported that 61% of 24 healthy male cigarette smokers were abstinent during a course of rapid smoking treatment. Physiological measurements such as EKG, arterial blood gases, and vital signs were taken during or after rapid smoking sessions. They concluded that "rapid smoking was found to be safe for healthy subjects."

Poole, Sanson-Fisher, German, and Harker (1980) studied the effects of 6-12 rapid smoking aversion therapy sessions on the blood pressure, pulse rate, and cardiac functioning of 58 male and female smokers. They noted no evidence of a cumulative effect in the temporary treatment-related rise in pulse and blood pressure. The appearance of some T wave flattening and S-T depression were not considered to represent a significant risk from such treatment.

Glasgow, Lichtenstein, Beaver, and O'Neil (1981) reported that such acute negative subjective reactions to rapid smoking treatment as dizziness, tingling and vomiting are apparently more related to relatively harmless temporary increases in carboxyhemoglobin levels rather than to any more relatively harmful consequences of nicotine poisoning.

Erickson, Tiffany, Martin, and Baker (1983) compared the results of rapid smoking, rapid puffing and nonaversive behavioral counseling therapies for 25 volunteer male and female smokers. All of the subjects achieved abstinence at the conclusion of six therapy sessions. At the 12-month post treatment follow-up the rapid smoking group achieved 70% abstinence while the rapid puffing group achieved only 33 1/3% abstinence and the behavioral counseling group achieved the lowest rate of 14.3% abstinence.

There have been few reports of the results of treatment at commercial stop smoking programs. Schwartz (1973) reported that 35% of Smoke Watchers' clients were still nonsmokers one year after treatment. Kanzler, Jaffe, & Zeidenberg (1976) reported that 39% of "graduates" of SmokEnders (27% of all participants) were still nonsmokers after one year. The Lung Association, reporting on 12 month abstinence rates, as reported by their 43 associations and cosponsors of smoking clinics indicated that success rates have increased from 11% in 1981 to nearly 33% in 1983 (Marwick, 1986).

## **Materials And Methods**

### **Program Description**

Briefly, the program consists of three phases termed "countdown phase," "counter-conditioning phase," and "support phase."

The countdown phase typically begins one week prior to the counter-conditioning phase. It consists of the enrollment interview, at the conclusion of which, the client is given instructional material and a wrist counter for recording each cigarette smoked during the countdown week. The instructional material includes sections to strengthen motivation to become a permanent nonsmoker, as well as instructions on how to record their cigarette consumption. It also includes educational material on addiction and habit formation.

In addition to the printed instructional material, an orientation meeting is scheduled. During that meeting all aspects of the program are explained, questions answered and additional nonsmoking motivational material is distributed.

The counter-conditioning phase consists of five days (typically five consecutive days) of one hour treatment sessions. Each treatment session begins with a short teaching and self management training session. Each session covers topics relevant to the treatment process and to remaining a nonsmoker. These include the concepts of habit formation, condition reflex formation, counter-conditioning, thought stopping, positive reinforcement for nonsmoking alternative behaviors, alternative structuring of time that formerly was “smoking time,” etc. In addition, questions and concerns of the client are addressed during this time.

Following the teaching period, the client receives aversive counter-conditioning. The technique is similar to that described by Chapman et al. (1971). It involves the pairing of an aversive level of faradic shock with each link in the chain of behaviors involved in the act of smoking (opening the pack, pulling out a cigarette, bringing a cigarette toward the mouth, placing the cigarette between the lips, lighting it, and puffing the cigarette). The faradic shock is generated by a desk top apparatus powered by a nine volt battery and fitted with a rheostat so that the therapist can vary the voltage (and thus the intensity of the pulsating stimulus). Although the voltage needed to produce a perceptible level of electro-stimulation may, in some cases, be high, the current that is delivered by the apparatus is minimal. It is on the order of one to three milliamps (maximum possible is 10 milliamps).

The stimulus is received by the client across the surface of the forearm skin as it completes the circuit from one stainless steel dime-sized contact to the other. The contacts are placed approximately two inches apart in a cradle device upon which the forearm is rested.

The technique also includes “quick puff” in which the quickly puffed cigarette smoke is hot and unpleasant to the mouth. The treatment takes place in a specially constructed smoking booth outfitted with a large ashtray overflowing with cigarette ashes and cigarette butts. This is intended to add to the unpleasant association with smoking. The therapist is stationed outside the booth (in order to avoid the toxic affects of side stream smoke) but is in visual contact through a window and has verbal contact through a speaker system.

Each client first receives an ascending level of faradic stimulation in order to determine the level of intensity that is perceived as aversive to that individual. That level is then used in the counter-conditioning session. The client administers the faradic stimulation to himself via a string and pulley device attached to the little finger on the hand holding the cigarette. Clients are instructed to avoid inhaling smoke during all parts of the treatment process. The objective is to assist the client to achieve total permanent abstinence from smoking by replacing previous positive associations of smoking with aversive associations.

As a part of the self management training, the client is given a #32 elastic band to place around the wrist of the smoking hand. He or she is instructed to snap the rubber band in an uncomfortable manner at any time an urge to smoke comes to mind. The client is also instructed to use thought stopping techniques and alternative behaviors in association with the “wrist snapper.”

### **Support Phase**

The support phase has as its objective the maintenance of the nonsmoking lifestyle achieved in the counter-conditioning phase. This part of the program is six weeks in length. It consists of weekly small group discussions, supportive counseling, weekly telephone contacts and one counter-conditioning reinforcement session in the second week.

Clients are entitled to a refund of all treatment fees if they are unable to stop smoking by the end of the counter-conditioning phase. The client must request this refund at the end of the fifth scheduled counter-conditioning session and must demonstrate that he is smoking in order to be eligible. Clients are also eligible to receive further

treatment without additional charge throughout their six week support phase.

## **Study Procedure**

Graduates of the Schick Centers at Northridge, Encino, and Orange (all in California) were contacted by Facts Consolidated, a professional research firm. A census of those clients who “graduated” during the first, second, third, and fourth quarters of 1985 was furnished to Facts Consolidated by Schick. From the total number of 269 first quarter graduates, a sample of 134 was selected using a random systematic procedure. From the total number of 242 second quarter graduates, a sample of 148 was selected. From the total of 155 third quarter graduates, a sample of 140. Finally, from the total of 166 fourth quarter graduates, a sample of 134 was selected using the same random process. The intent was to interview roughly one-third of the graduates.

From the randomly selected sample of 134 first quarter graduates every other client was systematically telephoned until a total of 89 interviews had been completed. Using the same technique 75 interviews were completed with the second quarter graduates, 91 interviews were completed with the third quarter graduates and 72 interviews were completed with the fourth quarter graduates. A sample of 327 selected in this manner has a margin for statistical error of  $\pm 5.5\%$  at the .95 confidence level.

All respondents were interviewed in person over the telephone. In cases where contact was unable to be made on the first call, at least four callbacks were made before a substitute client was used. In all, 1354 telephone dialings were required to complete the calls. These structured interviews took place in May 1986, July 1986, October 1986, and January of 1987. The calls were placed from a central telephone facility so that each call was monitored by the Facts Consolidated Project Supervisor. At the time of the interview, at least 13 months had elapsed since “graduation.” The follow-up included all “graduates” who completed the initial five days of treatment without requesting a refund, regardless of whether or not they participated in any of the support phase activities. Two percent of clients who started treatment dropped out before completion of the five days of counter-conditioning and seven percent asked for and received a refund at the end of that time. These two groups are not included in this study.

## **Results**

Male clients constituted 55.7% of the sample and females made up 44.3%. Their average age was 43.4 years. Most were married (64.89%) and employed (78.09%).

Prior to treatment they smoked an average of 32.1 cigarettes per day. Approximately 80% had tried to stop smoking prior to coming to Schick. Of those, many tried to stop on their own; however, 59.1% had tried other methods such as hypnosis, acupuncture, nicotine gum, or other formalized treatment programs. Of the 17 persons who had previously tried the Schick Program, eleven (55%) became non-smokers as a result of this second round of treatment. The average time between graduation and interview was 13.7 months.

The majority (52.0%) of the clients reported that they had not smoked at all since “graduation.” Most (57.89%) participated in at least some of the support phase sessions.

Those who returned to smoking did so an average of 69.1 days after graduation. Those who reported they knew exactly when they began to smoke reported they did so a median of 60 days after graduation. Those who could only estimate when they returned to smoking indicated it was a median of 80.6 days after graduation. Most of those who returned to smoking (59.9%) stated that they were smoking the same as before treatment while 30.6% indicated that they were smoking less. Those who returned to smoking say they did so primarily because of emotional or stressful situations, because they were “not ready to quit” or because they were around other smokers which was a very major factor. Although clients who came from a household with another smoker represented only 28.7% of the total sample, they comprised 42% of those who returned to smoking. When the sex of the client is considered, the factor of other smokers in the household becomes even more apparent. Initially it appeared that males were more likely to be successful (54.9%) than females (48.3%). However, when the environmental status

of living with a nonsmoker was considered, there is no significant difference in success rates between men (61.4%) and women (60.2%). To state this another way, of those who had consistently remained nonsmokers 86.0% of the men and 80.0% of the women lived with a non-smoker. Only 14% of the men and 20% of the women were able to abstain from smoking when they lived with a smoker.

Aversion sessions, in addition to those regularly scheduled in the treatment program, were used by 38.2% of the clients. In that group, a median of 1.1 additional counter-conditioning treatments were used. Total abstinence was obtained by 41.6% of that group. Of the total sample of graduates, 73.7% reported that they would recommend the Schick Program to others who wanted to quit smoking. When only those graduates who were successful nonsmokers were considered, 92.4% would recommend the Schick Program, while 53.5% of the graduates who had returned to smoking indicated they would recommend the program. None of the graduates reported any adverse effects of treatment.

## Conclusions

Using faradic aversive counter-conditioning, behavioral management techniques and education, the majority (52%) of clients treated in the Schick Stop Smoking Program achieved their goal of total abstinence and were still abstinent at follow-up an average of 13.7 months after treatment. Living in a household with another smoker is extremely detrimental to success (70.2% of those clients returned to smoking). The reverse is true for clients returning to a smoke-free household 60% remained nonsmokers. This suggests that simultaneous treatment of all smoking household members is indicated.

The treatment process appears to be free of complications and is regarded in a positive way by the majority of clients, even those who were unsuccessful.

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