6 Consumer Research Studies

In order to create a label that maximized consumer understanding, one label comprehension study (Study 3358) and four trials examining consumer usage under naturalistic conditions were conducted. Three of the consumer use studies (Studies 003, 022, 067) were Actual Use Trials investigating usage patterns based solely on the carton/package, while the remaining study (Study 014) also involved potential advertising. FDA input was incorporated in the Actual Use Trials. Collectively, these studies demonstrate the ability of the consumer population to use Ome-Mg safely and effectively within the proposed OTC label directions.

6.1 Label Comprehension Study

Study 3358 was conducted to determine how well consumers understand use directions for Prilosec 1 after reading the carton label (no medication dispensed). This study consisted of two parts: an original study and an addendum. The original study was conducted among over 500 consumers recruited by mall-intercept. The subjects were categorized into one or more of the following subgroups/cohorts: heartburn suffers, heartburn non-sufferers, low-literacy, and a "special condition" subgroup consisting of consumers who were taking one or more precluded medications and/or were pregnant/breast-feeding. The addendum was conducted to further explore responses from the "special condition" subgroup. Results of this research indicate consumers understood when and how to use Prilosec 1 for the treatment and prevention of heartburn, acid indigestion, and sour stomach.

6.1.1 Objectives

The study objectives were: (1) to evaluate how well consumers can determine if Prilosec 1 is a product they could personally use; and (2) to investigate how well consumers understand the conditions (i.e., uses, warnings, and directions) in which they could use the product.

Both objectives were addressed based only on the consumer reading the carton label; no medication was involved.

6.1.2 Methods

This study was conducted in 10 geographically diverse areas across the United States among 504 consumers, 18 years or older, who were divided into four cohorts. Table 6.1 gives information on composition and recruitment for the cohorts.

TABLE 6.1
LABEL COMPREHENSION STUDY COHORT INFORMATION

Cohort	Number of subjects (% of total)	Subject type	Recruitment Method
1	197 (39%)	Heartburn sufferers	Spontaneous intercept in malls/shopping centers
2	104 (21%)	Non-Sufferers	
3	155 (31%)	Sufferers and Non-sufferers at a 7^{th}–8^{th} grade or lower reading level	
4	117 (23%)	Subjects who were pregnant/breastfeeding or taking phenytoin, warfarin, or diazepam	Advertising or existing databases

Of the 504 subjects participating in the original study, 315 (62%) were female and 324 (64%) were 61 years of age or older. Of the 60 subjects participating in the addendum to the study, 82% (49/60) were 64 years of age or under.

A Screening Questionnaire was used to collect demographic information, heartburn incidence in the preceding 2 weeks, use of Rx products, and security requirements (e.g., participation in a research study in the past 6 months). Subjects were excluded who: (1) were less than 18 years of age; (2) either worked themselves or lived with someone who worked in healthcare or for an advertising agency or market research or public relations firm; (3) had participated in a healthcare study in the past 6 months; or (4) chose not to participate.

Reading ability was assessed using the Rapid Estimate of Adult Literacy in Medicine (REALM) test, a standardized, proven test that correlates with other, more sophisticated instruments.[32] The "low literacy level" (maximum 7^{th}–8^{th} grade equivalency level) participants in Cohort 3 were classified based on this test.

After reading the product label, subjects completed a Self-Selection Questionnaire (determining appropriateness of their personal use of the product). Subjects who were sufferers (Cohorts 1 and 3) and who answered that they would personally use the product or would ask their doctor/health professional about using it, then continued by responding to various product use scenarios outlined in the Product Use Label Comprehension Questionnaire. Subjects could refer back to the label, but Interviewers provided no clarification after asking the product use scenario question in this part of the study.

Comprehension of the following aspects of the label was evaluated:

- Appropriate use of the product (indications for use)
- How to use for preventing symptoms on days when heartburn is predicted
- How to use for preventing symptoms before provocative foods/beverages
- How to use for relief of symptoms
- When not to use or when to ask a health professional
- Take no more than one tablet in 24 hours
- When to stop using and ask a doctor
- What to do in case of overdose

6.1.3 Results

Of eight communication concepts evaluated, all were understood by the majority of subjects. An apparent low level of understanding the brand name/drug name of concomitant medications by the special condition cohort (Cohort 4) in the original study was further evaluated in the study addendum. Results indicate that the low response was an artifact of the way the question was asked and that the addition of the trade name of the precluded medications increased consumer understanding.

Appropriate use of product

Use of Prilosec 1 for either prevention or relief of heartburn was understood by 99% of respondents. The majority of respondents in Cohorts 1, 2, and 3 indicated they would use the product themselves, with 70% for prevention and 73% for relief. When asked if they would give the product to their 10-year-old child (after using the product themselves), 91% of all respondents said they would not without consulting a doctor first.

How to use for preventing symptoms on days where heartburn is predicted

Eighty percent (80%) of respondents understood when to use the product for prevention of heartburn if they expected a stressful day.

How to use for preventing symptoms before provocative foods/beverages

Eighty-three percent (83%) of the respondents understood when to use the product for prevention of heartburn before going out to eat provocative foods (pizza/cola).

How to use for relief of symptoms

Ninety-five percent (95%) of respondents understood when to use the product to relieve symptoms.

When not to use or when to ask a health professional

More than 81% of subjects understood they were to consult a doctor or health professional before using Prilosec 1 if they had trouble swallowing, >81% if they used the selected medications, and 96%–97% if they were pregnant or breast-feeding.

When people in Cohort 4 (women who are pregnant/nursing, or men and women taking diazepam, phenytoin, or warfarin) were asked if they would use the product to prevent or relieve heartburn, only a small percentage (9%–15%) replied they would not until they consulted a doctor. This prompted the study addendum to further explore the apparent conflict. Results of the addendum research indicated that the majority of subjects (81%) who use the selected medications or who are pregnant/nursing understand they need to contact a doctor prior to using the product due to their current medications/condition.

Take no more than 1 tablet in 24 hours

In a series of scenarios, 80%–95% of respondents understood that only one tablet should be taken over a 24-hour time period.

When to stop using and ask a doctor

Ninety-eight percent (98%) of respondents understood to stop using the product and consult a physician if they had persistent pain; 84% understood they were to use the product for no more than 14 consecutive days.

What to do in case of overdose

Ninety-four percent (94%) of respondents understood what to do in case of an overdose.

6.1.4 Conclusions

Results of this study demonstrate that, having read the carton label, consumers understand the conditions under which they can use the product. Importantly, for consumers who should use Prilosec 1 only under advice of a doctor, as well as those consumers with low literacy levels, the labeling (with the addition of the precluded medication trade name) adequately conveys conditions of product use.

6.2 Consumer Use Studies

6.2.1 Objectives

Studies 003, 014, 022, and 067 evaluated the usage patterns of Ome-Mg in preventing and/or treating heartburn symptoms in a naturalistic setting. Three studies (Studies 003, 022, and 067) were Actual Use Trials investigating usage patterns based solely on the carton/package, while the remaining study (Study 014) also involved potential advertising. The primary Actual Use studies (Studies 003 and 022) were conducted among general populations whose age ranged from 13-87 years. Since few adolescents were expected to participate in these trials, Study 067 was undertaken to supplement the 12–17 age range of Actual Use experience. The primary objective of these studies was to characterize the usage patterns and consistency with dosing directions of Ome-Mg when used *ad libitum* according to proposed label instructions under home-use conditions. Secondary objectives (Studies 003, 022, and 067) included evaluation of general effectiveness of Ome-Mg.

6.2.2 Methods

All studies were multi-center and open-label, and evaluated home use of Ome-Mg over approximately 4 weeks. Enrollment was based on self-determination of whether the product was appropriate for subjects to use after reading the proposed labeling (Studies 003, 022, and 067) or based upon intent to purchase after reading an advertising concept (Study 014). Studies of the general population (Studies 003, 014, and 022) were recruited by spontaneous intercept in shopping malls; Study 067 recruited an adolescent population from waiting rooms at medical practices.

To mimic a general consumer population, few Inclusion/Exclusion criteria were imposed in these studies. However, in order to identify a subgroup of low reading ability consumers, a REALM reading test was performed on subjects over 17 years old in Study 003 who indicated that they had not attended college.[32]

In general, the four studies followed this outline:

Enrollment: After reading the carton/package unit, potential subjects (or their guardians) decided if the product was appropriate for them to use. For those who elected to participate, a brief safety screening was performed to exclude subjects who

- Were pregnant or lactating.
- Were currently taking Rx H_2RAs, PPIs, phenytoin, warfarin, diazepam, or clarithromycin.
- Had hypersensitivity to the study medication.
- Experienced dysphagia, or abdominal pain >10 days.

Participation: Enrolled subjects

- Received study medication and a Product Use Journal at Visit 1. Thirty-six (36) tablets were given to each subject in Study 003, 022, and 067; 12 tablets were given to each subject in Study 014.
- Recorded usage, concomitant medications, AEs and pregnancy test results.
- Were contacted by phone to review progress midway through the study.

Final Visit: Subjects

- Returned journals and study medication, and reviewed concomitant medications and AEs.
- Provided an Overall Assessment of study medication.
- Mailed in Product Use Journals and study medication (Study 014).

Data from the early use studies (Study 003, 014, and 067) indicated that larger than expected numbers of subjects exceeded 10 consecutive days of use. A follow-up telephone survey by the investigator among 50 such subjects in Study 003 indicated that some subjects were receiving medical guidance. For this reason, a general medication use questionnaire was prospectively incorporated into Study 022 (at the exit visit) to better understand consumer behavior in getting medical guidance in product use.

6.2.3 Study Population

Table 6.2 summarizes subject participation in the four consumer usage studies. Collectively, 3,229 subjects at 75 study centers were given study medication (2,633 were given Ome-Mg 20 and 596 were given Ome-Mg 10) and Product Use Journals. Of those subjects given study medication, 2,355 were included in the safety analyses and 2,345 provided usage information and were included in the ITT analysis.

TABLE 6.2
SUBJECT DISPOSITION
CONSUMER USE STUDIES

	Study 003 (Ome-Mg 20)	**Study 014 (Ome-Mg 20)**	**Study 022 (Ome-Mg 10)**	**Study 067 (Ome-Mg 20)**
Agreed to participate	**1,137**	**1,516**	**627**	**100**
Failed entrance criteria or decision not to participate made by Subject, Investigator, or Sponsor	44	76	31	0
Received study medication and Product Use Journal	1,093	1,440	596	100
Safety Analysis[a]	833	939	491	92
Intent-to-Treat Population[b]	825	939	489	92
Usage Pattern Determination[c]	815	896	488	92

[a] Took a dose of study medication.

[b] Took a dose of study medication and Product Use Journal information available.

[c] All Product Use Journal information complete.

6.2.4 Demographics

Demographics for the consumer use studies are presented in Table 6.3. In Study 003, 10% of the total study population had a score indicating low reading ability.

TABLE 6.3
DEMOGRAPHICS OF PARTICIPANTS IN CONSUMER USE STUDIES
(INTENT-TO-TREAT POPULATION)

Study No.	003 Ome-Mg 20 (N=825)	014 Ome-Mg 20 (N=939)	022 Ome-Mg 10 (N=489)	067 (Adolescent) Ome-Mg 20 (N=92)
Gender				
Female	497 (60%)	606 (65%)	289 (59%)	56 (61%)
Male	328 (40%)	333 (35%)	200 (41%)	36 (39%)
Race				
Asian	4 (<1%)	2 (<1%)	0 (0%)	0 (0%)
Black	113 (14%)	85 (9%)	34 (7%)	0 (0%)
Caucasian	621 (75%)	789 (84%)	418 (85%)	88 (96%)
Hispanic	56 (7%)	35 (4%)	27 (6%)	4 (4%)
Other	31 (4%)	28 (3%)	10 (2%)	0 (0%)
Age				
Mean (SD)	47.31 (17.66)	43.08 (16.43)	45.6 (17.97)	14.36 (1.69)
Min/Max	13.0–84.0	18–82.0	13.0–87.0	12.0–17.0
Educational Level				
≤8th grade	18 (2%)	—	11 (2%)	—
Some HS, GED, or HS dip	317 (38%)	—	204 (42%)	—
Some college or higher	490 (59%)	—	274 (56%)	—

As in the well-controlled clinical trials, subjects in the three Actual Use Studies recorded those factors they associated with their heartburn during the 30-day period preceding the study. Table 6.4 shows the percentage of subjects identifying each factor (they could choose as many as applied). As seen in the table, the percentages are generally similar to those in the well-controlled trials. (Table 5.3)

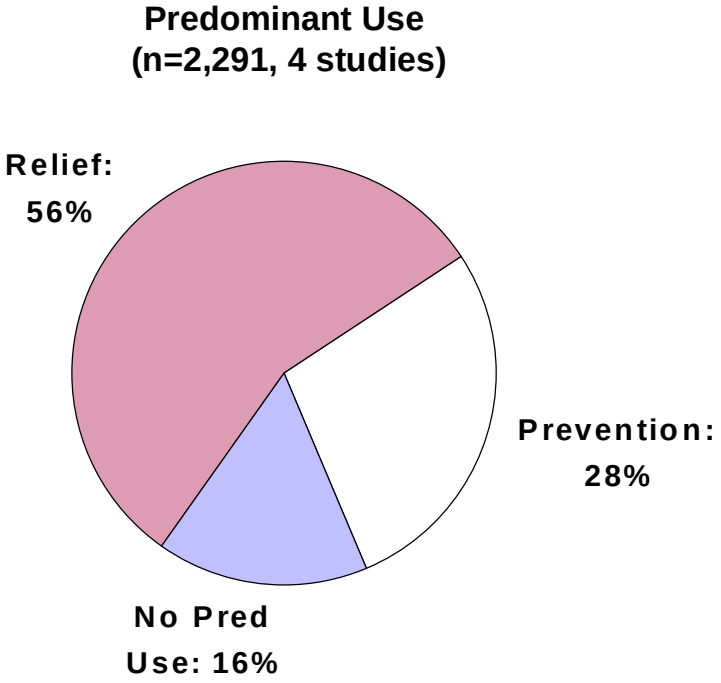
TABLE 6.4
FACTORS ASSOCIATED WITH HEARTBURN

	# 003 (825)	# 022 (489)	# 067 (92)
Factor	**% of subjects who indicated that factor contributed to heartburn**		
Food/Beverage	93	91	84
Stress	52	53	65
Lying Down	26	25	13
Hectic Lifestyle	19	20	29
Physical Activity	7	8	17
Medications	3	3	7
Subjects may indicate more than one factor that contributes to heartburn.			

6.2.5 Results

Usage patterns were summarized in terms of predominant use of the study medication, according to the categories in Figure 6.1. Across trials, 28% of consumers used the medication predominantly for prevention, 56% used the medication predominantly to relieve heartburn symptoms, and 16% used the study medication without a predominant use. Usage patterns for adolescents, 12–17 years of age (Study 067) were very similar to the general population in Studies 003, 014, and 022, comprised almost entirely of adults.

FIGURE 6.1
USAGE PATTERNS SUMMARIZED BY PREDOMINANT USE CATEGORY



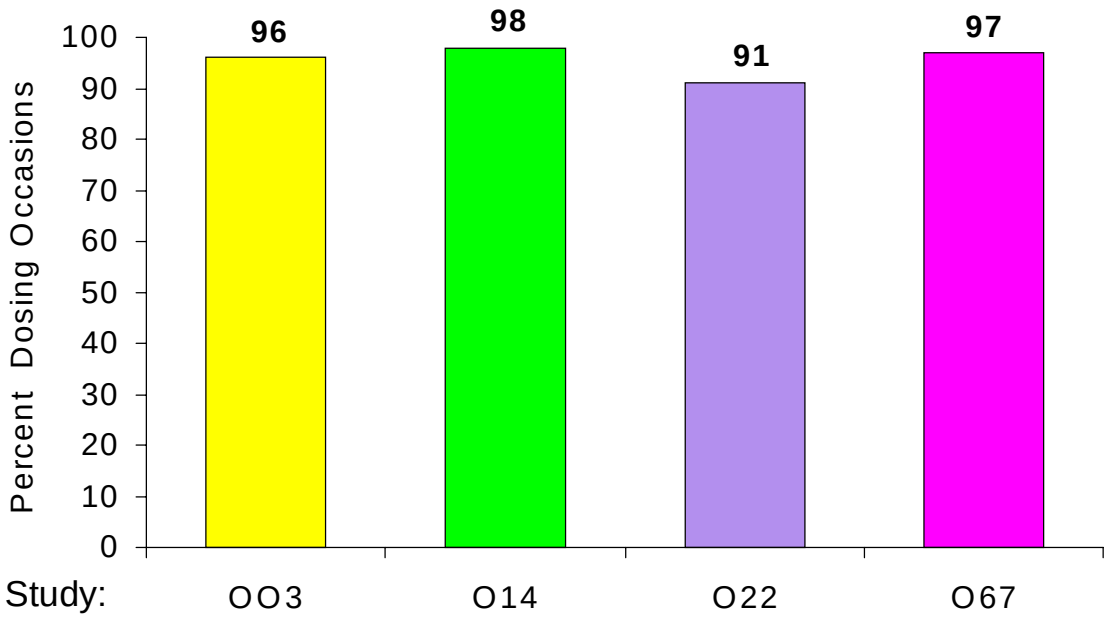
6.2.5.1 Consistency with Label Use Directions

Consistency of consumer's use with each of the three label use directions was examined: whether subjects took only one tablet per dose; whether they took no more than one dose per day; and whether they adhered to the direction to take no more than 10 days without seeing a physician. The results are summarized as follows:

One Tablet Per Dose

- Percentage of dosing occasions: across 24,802 dosing occasions, only one tablet was taken in 96%–98% of dosing occasions involving Ome-Mg 20, and 91% of dosing occasions involving Ome-Mg 10 (Figure 6.2).
- Percentage of subjects: across the four trials, 81% to 96% of subjects never exceeded one tablet on any dosing occasion over the 4-week use period.
- Slightly more subjects using Ome-Mg 10 violated this label instruction (19%) than subjects using Ome-Mg 20 (4%–14%).

FIGURE 6.2
PERCENTAGE OF DOSING OCCASIONS ON WHICH NO MORE THAN 1 TABLET WAS TAKEN

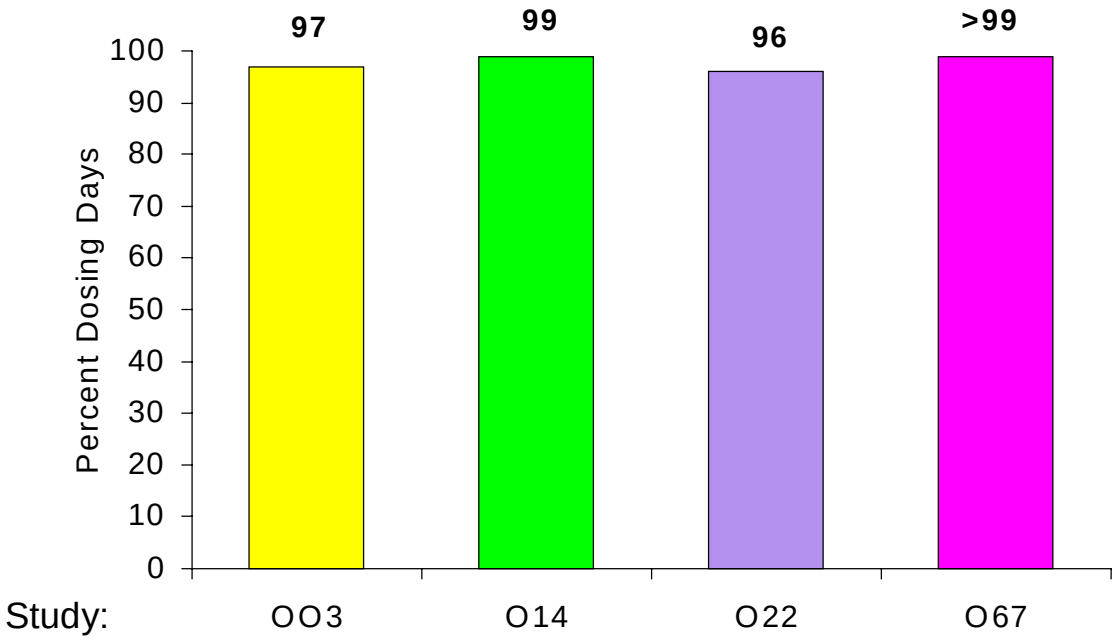


(24,802 dosing occasions among 2,291 consumers)

No More than One Dose per Day

- Percentage of dosing days: across 24,071 dosing days, 96%–99% involved no more than one dose of the study medication (Figure 6.3).
- Percentage of subjects: across the four trials, 87%–97% of subjects never exceeded one dose on any dosing day.
- In Studies 003 and 022 approximately half of all multiple-dose days involved doses for both prevention and relief of symptoms. This pattern represents 1%–2% of the total 16,568 dosing days in the studies.

FIGURE 6.3
PERCENTAGE OF DOSING DAYS WITH NO MORE THAN 1 DOSE TAKEN

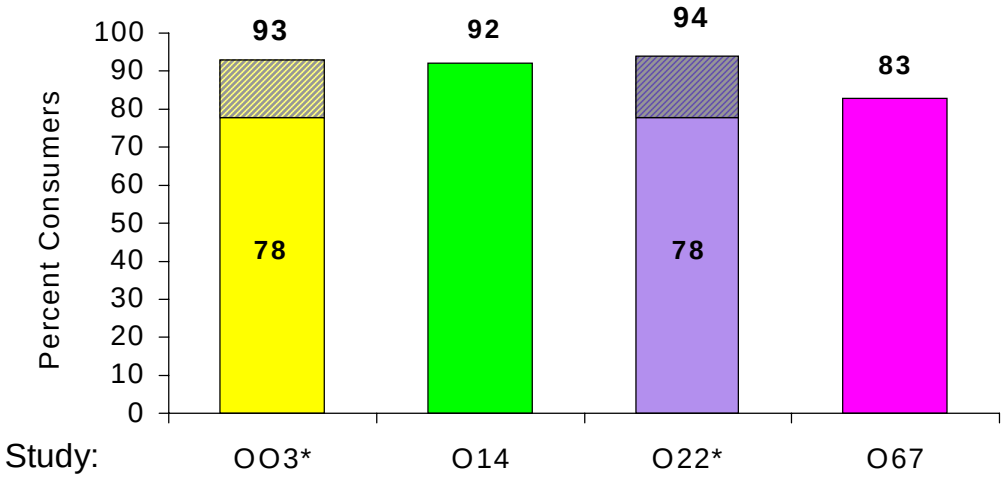


(24,071 dosing days among 2291 consumers.)

No More than 10 Consecutive Days of Dosing

- Percentage of subjects: across 2,287 consumers in the four trials, 78%–92% of subjects never exceeded 10 consecutive days of dosing during the 4-week use period (Figure 6.4).
- Subjects who took the study medication for heartburn relief were generally compliant with this instruction.
- Approximately 96%–100% of subjects who took it exclusively for relief, the largest exclusive use category (and 92%–98% who took it predominantly for heartburn relief, the largest predominant use category) never disregarded the instruction.

FIGURE 6.4
PERCENTAGE OF SUBJECTS TAKING MEDICATION
FEWER THAN 10 CONSECUTIVE DAYS
(n=2,287 consumers)



(n=2,287 consumers)

** Includes consumers who sought medical guidance (003 estimated, 022 actual)*

As noted earlier, there were no provisions in the study designs of Studies 003, 067, and 014 to determine if subjects contacted a doctor either before or during the study about heartburn or the use of medications to treat their heartburn. In Study 003, the investigator did a survey among 50 offending subjects, approximately 28% of the 181 subjects who exceeded 10 consecutive days of use during the study. Results suggest that most (up to 70%) of these 50 subjects had former or current medical guidance, i.e., had previously used Rx Prilosec, consulted with a physician or pharmacist during the study, or followed a friend's/family member's Rx directions for Rx Prilosec. To better understand subjects' use of medical guidance in taking this medication, a questionnaire was used in the exit visit of Study 022. Investigation of the subjects' questionnaire responses and history shows that 72% of consumers who took Prilosec 1 for more than 10 consecutive days, did so under the advice of a physician or other health care professional during the study or were under the care of a doctor for their heartburn. Hence, the percentage of subjects who took Prilosec 1 beyond 10 consecutive days drops from 22% (ignoring the questionnaire data) to only 6% doing so without involvement of a physician or other health care professional.

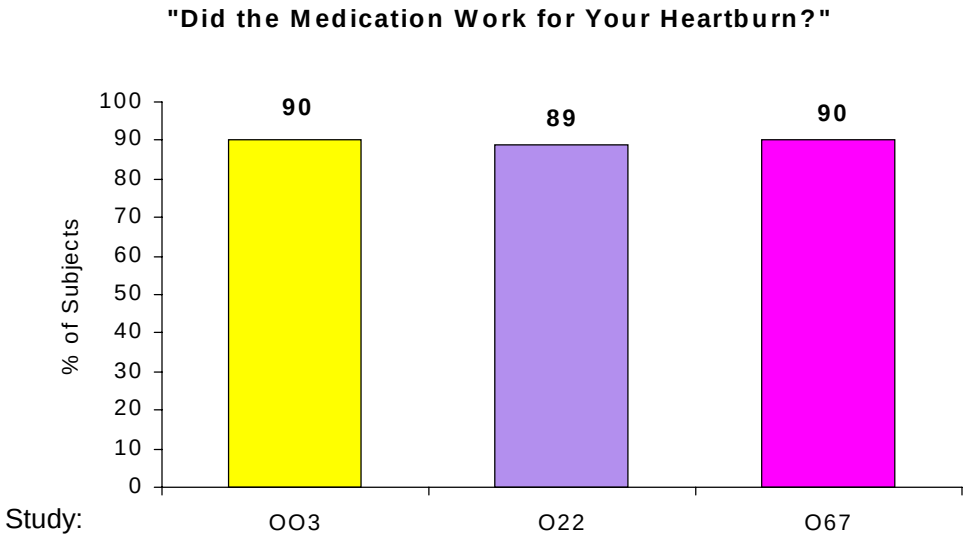
Subgroups

Consistency with label instructions was comparable for males and females, Caucasians and non-Caucasians, and elderly (≥65 years old) and non-elderly (<65 years old) subjects. In addition, usage patterns and consistency with label directions were not appreciably different among subjects with low reading ability.

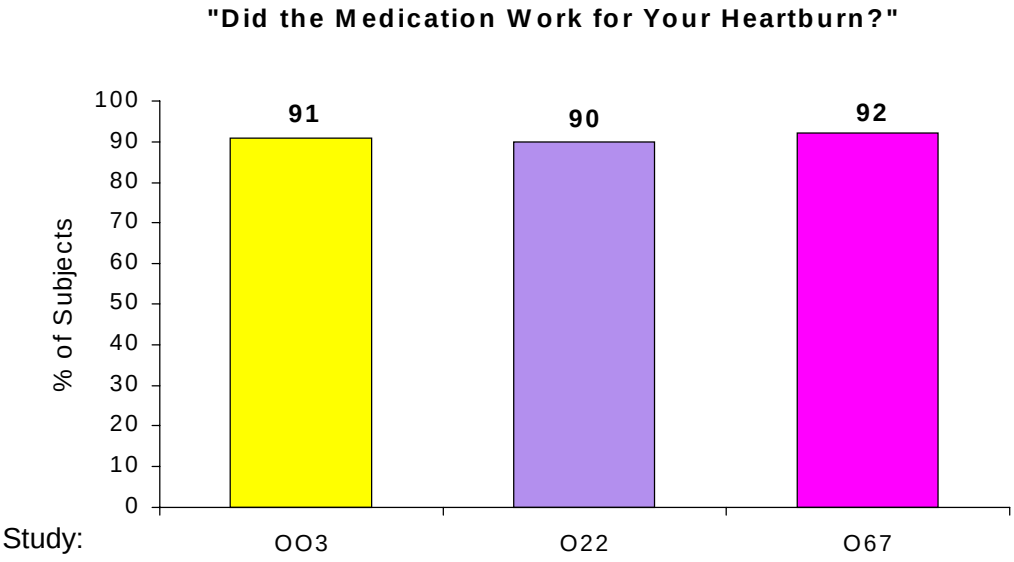
6.2.5.2 General Effectiveness

Figure 6.5 summarizes general effectiveness of study medication in Studies 003, 022, and 067 and shows that consumers find Prilosec 1 effective under actual conditions of use. However, these trials were open label and contained no placebo comparators. On average, effectiveness was achieved in 90% of all first-dose occasions and 91% of all dosing occasions.

FIGURE 6.5
PERCENT OF DOSING OCCASIONS RATED EFFECTIVE



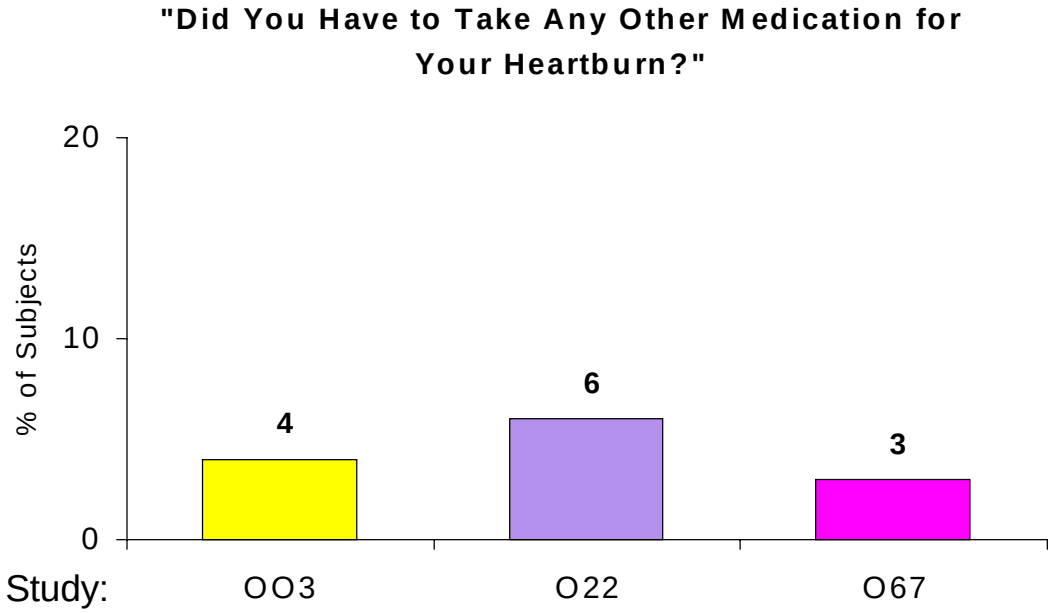
Percent of first dosing occasions (n=1,406) rated effective



Percent of all dosing occasions (n=24,802 occasions) rated effective.

General satisfaction with the efficacy of Prilosec 1 under conditions of actual use is also shown in the low use of backup medication to treat their heartburn (Figure 6.6).

FIGURE 6.6
PERCENT OF SUBJECTS DOSING WITH BACKUP MEDICATION



Percent of all dosing occasions (n=24,802) with backup medication use.

6.2.6 Conclusion

In conclusion, these studies suggest that approximately 56% of consumers will use Ome-Mg predominantly for relief, 28% predominantly for prevention, and the remainder about equally for prevention and relief of heartburn symptoms. The proposed label for Ome-Mg provides OTC consumers with sufficiently clear dosing information, and adherence to label directions is good under conditions of actual use.