HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use NEXIUM safely and effectively. See full prescribing information for NEXIUM.

NEXIUM (esomeprazole magnesium) DELAYED-RELEASE CAPSULES
NEXIUM (esomeprazole magnesium) FOR DELAYED-RELEASE ORAL SUSPENSION

INITIAL US APPROVAL: 1989 (omeprazole)

----------RECENT MAJOR CHANGES----------

Dosage and Administration, Pediatric (2) February, 2008

----------INDICATIONS AND USAGE----------

NEXIUM is a proton pump inhibitor indicated for the following:

- Treatment of Gastroesophageal Reflux Disease (GERD) (1.1)
- Risk Reduction of NSAID-Associated Gastric Ulcer (1.2)
- *H. pylori* Eradication to Reduce the Risk of Duodenal Ulcer Recurrence (1.3)
- Pathological Hypersecretory Conditions Including Zollinger-Ellison Syndrome (1.4)
- The safety and effectiveness of NEXIUM in pediatric patients < 1 year of age have not been established. (8.4)

----------DOSAGE AND ADMINISTRATION----------

Indication	Dose	Frequency
Treatment of Gastroesophageal Reflux Disease (GERD) (1.1)		
Adult Dosing	20 mg or 40 mg	Once Daily for 4 to 8 Weeks
Pediatric Dosing (8.4)		
1-11 years	10 mg or 20 mg	Once Daily, up to 8 Weeks
12-17 years	20 mg or 40 mg	
Risk Reduction of NSAID-Associated Gastric Ulcer (1.2)		
	20 mg or 40 mg	Once Daily for up to 6 months
***H. pylori* Eradication to Reduce the Risk of Duodenal Ulcer Recurrence** (1.3)		
Triple Therapy:		
NEXIUM	40 mg	Once Daily for 10 Days
Amoxicillin	1000 mg	Twice Daily for 10 Days
Clarithromycin	500 mg	Twice Daily for 10 Days
Pathological Hypersecretory Conditions Including Zollinger-Ellison Syndrome (1.4)		
	40 mg	Twice Daily

----------DOSAGE FORMS AND STRENGTHS----------

- NEXIUM Delayed-Release Capsules, 20 mg and 40 mg (3)
- NEXIUM For Delayed-Release Oral Suspension, 10 mg, 20 mg, and 40 mg (3)

----------CONTRAINDICATIONS----------

NEXIUM is contraindicated in patients with known hypersensitivity to any component of the formulation or to substituted benzimidazoles. (4)
Hypersensitivity reactions e.g., angioedema and anaphylactic reaction/shock have been reported with NEXIUM use. (4)

----------WARNINGS AND PRECAUTIONS----------

- Symptomatic response to NEXIUM does not preclude the presence of gastric malignancy (5.1)
- Atrophic gastritis has been noted on biopsy with long-term omeprazole therapy (5.1)

----------ADVERSE REACTIONS----------

Most common adverse reactions:
Adult use (≥ 18 years of age) (incidence ≥ 1%):

- Headache, diarrhea, nausea, flatulence, abdominal pain, constipation, and dry mouth (6.1)

Pediatric use (1 - 17 years of age) (incidence ≥ 1-2%):

- Headache, diarrhea, abdominal pain, nausea, and somnolence (6.1)

To report SUSPECTED ADVERSE REACTIONS, contact AstraZeneca at 1-800-236-9933 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

----------DRUG INTERACTIONS----------

- NEXIUM inhibits gastric acid secretion and may interfere with the absorption of drugs where gastric pH is an important determinant of bioavailability (e.g., ketoconazole, iron salts and digoxin) (7)
- Patients treated with proton pump inhibitors and warfarin concomitantly may need to be monitored for increases in INR and prothrombin time (7)
- NEXIUM may reduce the plasma levels of atazanavir (7)
- Concomitant treatment with a combined inhibitor of CYP2C19 and CYP3A4, such as voriconazole, may result in more than doubling of the esomeprazole exposure (7).

----------USE IN SPECIFIC POPULATIONS----------

- Hepatic Insufficiency: No dosage adjustment is necessary in patients with mild to moderate liver impairment (Child Pugh Classes A and B). For patients with severe liver impairment (Child Pugh Class C), a dose of 20 mg of NEXIUM should not be exceeded. (2)

----------SEE 17 FOR PATIENT COUNSELING INFORMATION----------

REVISED 02/2008

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- **1.2 Risk Reduction of NSAID-Associated Gastric Ulcer**
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FULL PRESCRIBING INFORMATION

1 INDICATIONS AND USAGE

1.1 Treatment of Gastroesophageal Reflux Disease (GERD)

Healing of Erosive Esophagitis

NEXIUM® is indicated for the short-term treatment (4 to 8 weeks) in the healing and symptomatic resolution of diagnostically confirmed erosive esophagitis. For those patients who have not healed after 4 to 8 weeks of treatment, an additional 4 to 8 week course of NEXIUM may be considered.

Maintenance of Healing of Erosive Esophagitis

NEXIUM is indicated to maintain symptom resolution and healing of erosive esophagitis. Controlled studies do not extend beyond 6 months.

Symptomatic Gastroesophageal Reflux Disease

NEXIUM is indicated for treatment of heartburn and other symptoms associated with GERD.

1.2 Risk Reduction of NSAID-Associated Gastric Ulcer

NEXIUM is indicated for the reduction in the occurrence of gastric ulcers associated with continuous NSAID therapy in patients at risk for developing gastric ulcers. Patients are considered to be at risk due to their age (≥ 60) and/or documented history of gastric ulcers. Controlled studies do not extend beyond 6 months.

1.3 *H. pylori* Eradication to Reduce the Risk of Duodenal Ulcer Recurrence

Triple Therapy (NEXIUM plus amoxicillin and clarithromycin): NEXIUM, in combination with amoxicillin and clarithromycin, is indicated for the treatment of patients with *H. pylori* infection and duodenal ulcer disease (active or history of within the past 5 years) to eradicate *H. pylori*. Eradication of *H. pylori* has been shown to reduce the risk of duodenal ulcer recurrence. [*See Clinical Studies (14) and Dosage and Administration. (2)*]

In patients who fail therapy, susceptibility testing should be done. If resistance to clarithromycin is demonstrated or susceptibility testing is not possible, alternative antimicrobial therapy should be instituted. [See *Clinical Pharmacology, Microbiology (12)]* and the clarithromycin package insert, *Clinical Pharmacology, Microbiology*.

1.4 Pathological Hypersecretory Conditions Including Zollinger-Ellison Syndrome

NEXIUM is indicated for the long-term treatment of pathological hypersecretory conditions, including Zollinger-Ellison Syndrome.

2 DOSAGE AND ADMINISTRATION

NEXIUM is supplied as delayed-release capsules for oral administration or in packets for preparation of delayed-release oral suspensions. The recommended dosages are outlined in the table below. NEXIUM should be taken at least one hour before meals.

The duration of proton pump inhibitor administration should be based on available safety and efficacy data specific to the defined indication and dosing frequency, as described in the Prescribing Information, and individual patient medical needs. Proton pump inhibitor treatment should only be initiated and continued if the benefits outweigh the risks of treatment.

Table 1

Recommended Dosage Schedule of NEXIUM

Indication	Dose	Frequency
Gastroesophageal Reflux Disease (GERD)		
Healing of Erosive Esophagitis	20 mg or 40 mg	Once Daily for 4 to 8 Weeks*
Maintenance of Healing of Erosive Esophagitis	20 mg	Once Daily**
Symptomatic Gastroesophageal Reflux Disease	20 mg	Once Daily for 4 Weeks***
Risk Reduction of NSAID-Associated Gastric Ulcer	20 mg or 40 mg	Once Daily for up to 6 months**
***H. pylori* Eradication to Reduce the Risk of Duodenal Ulcer Recurrence**		
Triple Therapy:		
NEXIUM	40 mg	Once Daily for 10 Days
Amoxicillin	1000 mg	Twice Daily for 10 Days
Clarithromycin	500 mg	Twice Daily for 10 Days
Pathological Hypersecretory Conditions Including Zollinger-Ellison Syndrome	40 mg†	‡Twice Daily
Pediatric Use		
1 to 11 Year Olds+		
Short-term Treatment of Symptomatic GERD	10 mg	Once Daily for up to 8 Weeks
Healing of Erosive Esophagitis		
weight < 20 kg	10 mg	Once Daily for 8 Weeks
weight ≥ 20 kg	10 mg or 20 mg	Once Daily for 8 Weeks
12 to 17 Year Olds		
Short-term Treatment of GERD	20 mg or 40 mg	Once Daily for up to 8 Weeks

*[*see Clinical Studies.(14)]* The majority of patients are healed within 4 to 8 weeks. For patients who do not heal after 4 to 8 weeks, an additional 4 to 8 weeks of treatment may be considered.
**Controlled studies did not extend beyond six months.
***If symptoms do not resolve completely after 4 weeks, an additional 4 weeks of treatment may be considered.
+Doses over 1 mg/kg/day have not been studied.
†The dosage of NEXIUM in patients with pathological hypersecretory conditions varies with the individual patient. Dosage regimens should be adjusted to individual patient needs.
‡Doses up to 240 mg daily have been administered. *[See Drug Interactions (7)]*

Please refer to amoxicillin and clarithromycin full prescribing information for *Contraindications, Warnings* and dosing in elderly and renally-impaired patients.

Special Populations

Geriatric
No dosage adjustment is necessary. [*See Clinical Pharmacology, Pharmacokinetics. (12.3)]*

Renal Insufficiency
No dosage adjustment is necessary. [*See Clinical Pharmacology, Pharmacokinetics. (12.3)]*

Hepatic Insufficiency
No dosage adjustment is necessary in patients with mild to moderate liver impairment (Child Pugh Classes A and B). For patients with severe liver impairment (Child Pugh Class C), a dose of 20 mg of NEXIUM should not be exceeded [*See Clinical Pharmacology, Pharmacokinetics*. *(12.3)]*

Gender
No dosage adjustment is necessary. [*See Clinical Pharmacology, Pharmacokinetics*. *(12.3)*]

Administration Options

Directions for use specific to the route and available methods of administration for each of these dosage forms are presented below.

Table 2

Administration Options		
Type	**Route**	**Options**
Delayed-Release Capsule	Oral	Capsule can be swallowed whole. Capsule can be opened and mixed with applesauce.
Delayed-Release Capsule	Nasogastric Tube	Capsule can be opened and the intact granules emptied into a syringe and delivered through the nasogastric tube.
For Delayed-Release Oral Suspension	Oral	Mix contents of packet with 1 tablespoon (15 mL) of water, leave 2 to 3 minutes to thicken, stir and drink within 30 minutes.
For Delayed-Release Oral Suspension	Nasogastric or Gastric Tube	Add 15 mL of water to a syringe and then add contents of packet. Shake the syringe; leave 2 to 3 minutes to thicken. Shake the syringe and inject through the nasogastric or gastric tube within 30 minutes.

NEXIUM Delayed-Release Capsules

NEXIUM Delayed-Release Capsules should be swallowed whole.

Alternatively, for patients who have difficulty swallowing capsules, one tablespoon of applesauce can be added to an empty bowl and the NEXIUM Delayed-Release Capsule can be opened, and the granules inside the capsule carefully emptied onto the applesauce. The granules should be mixed with the applesauce and then swallowed immediately. The applesauce used should not be hot and should be soft enough to be swallowed without chewing. The granules should not be chewed or crushed. The granules/applesauce mixture should not be stored for future use.

For patients who have a nasogastric tube in place, NEXIUM Delayed-Release Capsules can be opened and the intact granules emptied into a 60 mL catheter tipped syringe and mixed with 50 mL of water. It is important to only use a catheter tipped syringe when administering NEXIUM through a nasogastric tube. Replace the plunger and shake the syringe vigorously for 15 seconds. Hold the syringe with the tip up and check for granules remaining in the tip. Attach the syringe to a nasogastric tube and deliver the contents of the syringe through the nasogastric tube into the stomach. After administering the granules, the nasogastric tube should be flushed with additional water. Do not administer the granules if they have dissolved or disintegrated.

The suspension must be used immediately after preparation.

NEXIUM For Delayed-Release Oral Suspension

NEXIUM For Delayed-Release Oral Suspension should be administered as follows:

- Empty the contents of a 10 mg, 20 mg or 40 mg packet into a container containing 1 tablespoon (15 mL) of water.
- Stir.
- Leave 2 to 3 minutes to thicken.
- Stir and drink within 30 minutes.
- If any material remains after drinking, add more water, stir, and drink immediately.

For patients who have a nasogastric or gastric tube in place, NEXIUM For Delayed-Release Oral Suspension can be administered as follows:

- Add 15 mL of water to a catheter tipped syringe and then add the contents of a 10 mg, 20 mg or 40 mg NEXIUM packet. It is important to only use a catheter tipped syringe when administering NEXIUM through a nasogastric tube or gastric tube.
- Immediately shake the syringe and leave 2 to 3 minutes to thicken.
- Shake the syringe and inject through the nasogastric or gastric tube, French size 6 or larger, into the stomach within 30 minutes.

- Refill the syringe with 15 mL of water.
- Shake and flush any remaining contents from the nasogastric or gastric tube into the stomach.

3 DOSAGE FORMS AND STRENGTHS

NEXIUM Delayed-Release Capsules, 20 mg - opaque, hard gelatin, amethyst colored capsules with two radial bars in yellow on the cap and NEXIUM 20 mg in yellow on the body.

NEXIUM Delayed-Release Capsules, 40 mg - opaque, hard gelatin, amethyst colored capsules with three radial bars in yellow on the cap and NEXIUM 40 mg in yellow on the body.

NEXIUM For Delayed-Release Oral Suspension, 10 mg, 20 mg or 40 mg - unit dose packet containing a fine yellow powder, consisting of white to pale brownish esomeprazole granules and pale yellow inactive granules.

4 CONTRAINDICATIONS

NEXIUM is contraindicated in patients with known hypersensitivity to any component of the formulation or to substituted benzimidazoles.

Hypersensitivity reactions e.g., angioedema and anaphylactic reaction/shock have been reported with NEXIUM use.

5 WARNINGS AND PRECAUTIONS

5.1 NEXIUM

Symptomatic response to therapy with NEXIUM does not preclude the presence of gastric malignancy.

Atrophic gastritis has been noted occasionally in gastric corpus biopsies from patients treated long-term with omeprazole, of which NEXIUM is an enantiomer.

5.2 Amoxicillin

Amoxicillin: Serious and occasionally fatal hypersensitivity (anaphylactic) reactions have been reported in patients on penicillin therapy. These reactions are more apt to occur in individuals with a history of penicillin hypersensitivity and/or a history of sensitivity to multiple allergens.

There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions that have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before initiating therapy with any penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, amoxicillin should be discontinued and the appropriate therapy instituted.

Serious anaphylactic reactions require immediate emergency treatment with epinephrine. Oxygen, intravenous steroids, and airway management, including intubation, should also be administered as indicated.

Pseudomembranous colitis has been reported with nearly all antibacterial agents, including clarithromycin and amoxicillin, and may range in severity from mild to life threatening. Therefore, it is important to consider this diagnosis in patients who present with diarrhea subsequent to the administration of antibacterial agents.

Treatment with antibacterial agents alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is a primary cause of "antibiotic-associated colitis".

After the diagnosis of pseudomembranous colitis has been established, therapeutic measures should be initiated. Mild cases of pseudomembranous colitis usually respond to discontinuation of the drug alone. In moderate to severe cases, consideration should be given to management with fluids and electrolytes, protein supplementation, and treatment with an antibacterial drug clinically effective against *Clostridium difficile* colitis.

5.3 Clarithromycin

Clarithromycin should not be used in pregnant women except in clinical circumstances where no alternative therapy is appropriate. If pregnancy occurs while taking clarithromycin, the patient should be apprised of the potential hazard to the fetus. (See WARNINGS in prescribing information for clarithromycin.)

6 ADVERSE REACTIONS

6.1 Clinical Studies Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

The safety of NEXIUM was evaluated in over 15,000 patients (aged 18 to 84 years) in clinical trials worldwide including over 8,500 patients in the United States and over 6,500 patients in Europe and Canada. Over 2,900 patients were treated in long-term studies for up to 6-12 months. In general, NEXIUM was well tolerated in both short and long-term clinical trials.

The safety of NEXIUM was evaluated in 316 pediatric and adolescent patients aged 1 to 17 years in four clinical trials for the treatment of symptomatic GERD. [*See Clinical Studies (14.2)*] In 109 pediatric patients aged 1 to 11 years, the most frequently reported (at least 1%) treatment related adverse reactions in these patients were diarrhea (2.8%), headache (1.9%) and somnolence (1.9%). In 149 pediatric patients aged 12 to 17 years the most frequently reported (at least 2%) treatment related adverse reactions in these patients were headache (8.1%), abdominal pain (2.7%), diarrhea (2%) and nausea (2%). No new safety concerns were identified in pediatric patients.

The safety in the treatment of healing of erosive esophagitis was assessed in four randomized comparative clinical trials, which included 1,240 patients on NEXIUM 20 mg, 2,434 patients on NEXIUM 40 mg, and 3,008 patients on omeprazole 20 mg daily. The most frequently occurring adverse reactions (≥1%) in all three groups were headache (5.5, 5.0, and 3.8, respectively) and diarrhea (no difference among the three groups). Nausea, flatulence, abdominal pain, constipation, and dry mouth occurred at similar rates among patients taking NEXIUM or omeprazole.

Additional adverse reactions that were reported as possibly or probably related to NEXIUM with an incidence < 1% are listed below by body system:

Body as a Whole*:** abdomen enlarged, allergic reaction, asthenia, back pain, chest pain, substernal chest pain, facial edema, peripheral edema, hot flushes, fatigue, fever, flu-like disorder, generalized edema, leg edema, malaise, pain, rigors; ***Cardiovascular*:** flushing, hypertension, tachycardia; ***Endocrine*:** goiter; ***Gastrointestinal*:** bowel irregularity, constipation aggravated, dyspepsia, dysphagia, dysplasia GI, epigastric pain, eructation, esophageal disorder, frequent stools, gastroenteritis, GI hemorrhage, GI symptoms not otherwise specified, hiccup, melena, mouth disorder, pharynx disorder, rectal disorder, serum gastrin increased, tongue disorder, tongue edema, ulcerative stomatitis, vomiting; ***Hearing: earache, tinnitus; ***Hematologic*:** anemia, anemia hypochromic, cervical lymphoadenopathy, epistaxis, leukocytosis, leukopenia, thrombocytopenia; ***Hepatic*:** bilirubinemia, hepatic function abnormal, SGOT increased, SGPT increased; ***Metabolic/Nutritional:*** glycosuria, hyperuricemia, hyponatremia, increased alkaline phosphatase, thirst, vitamin B12 deficiency, weight increase, weight decrease; ***Musculoskeletal*:** arthralgia, arthritis aggravated, arthropathy, cramps, fibromyalgia syndrome, hernia, polymyalgia rheumatica; ***Nervous System/Psychiatric*:** anorexia, apathy, appetite increased, confusion, depression aggravated, dizziness, hypertonia, nervousness, hypoesthesia, impotence, insomnia, migraine, migraine aggravated, paresthesia, sleep disorder, somnolence, tremor, vertigo, visual field defect; ***Reproductive*:** dysmenorrhea, menstrual disorder, vaginitis; ***Respiratory*:** asthma aggravated, coughing, dyspnea, larynx edema, pharyngitis, rhinitis, sinusitis; ***Skin and Appendages*:** acne, angioedema, dermatitis, pruritus, pruritus ani, rash, rash erythematous, rash maculo-papular, skin inflammation, sweating increased, urticaria; ***Special Senses:*** otitis media, parosmia, taste loss, taste perversion; ***Urogenital*:** abnormal urine, albuminuria, cystitis, dysuria, fungal infection, hematuria, micturition frequency, moniliasis, genital moniliasis, polyuria; ***Visual*:** conjunctivitis, vision abnormal.

Endoscopic findings that were reported as adverse reactions include: duodenitis, esophagitis, esophageal stricture, esophageal ulceration, esophageal varices, gastric ulcer, gastritis, hernia, benign polyps or nodules, Barrett's esophagus, and mucosal discoloration.

The incidence of treatment-related adverse reactions during 6-month maintenance treatment was similar to placebo. There were no differences in types of related adverse reactions seen during maintenance treatment up to 12 months compared to short-term treatment.

Two placebo-controlled studies were conducted in 710 patients for the treatment of symptomatic gastroesophageal reflux disease. The most common adverse reactions that were reported as possibly or probably related to NEXIUM were diarrhea (4.3%), headache (3.8%), and abdominal pain (3.8%).

6.2 Combination Treatment with Amoxicillin and Clarithromycin

In clinical trials using combination therapy with NEXIUM plus amoxicillin and clarithromycin, no additional adverse reactions specific to these drug combinations were

observed. Adverse reactions that occurred were limited to those observed when using NEXIUM, amoxicillin, or clarithromycin alone.

The most frequently reported drug-related adverse reactions for patients who received triple therapy for 10 days were diarrhea (9.2%), taste perversion (6.6%), and abdominal pain (3.7%). No treatment-emergent adverse reactions were observed at higher rates with triple therapy than were observed with NEXIUM alone.

For more information on adverse reactions with amoxicillin or clarithromycin, refer to their package inserts, *Adverse Reactions* sections.

6.3 Monitoring: Laboratory Tests

The following potentially clinically significant laboratory changes in clinical trials, irrespective of relationship to NEXIUM, were reported in ≤ 1% of patients: increased creatinine, uric acid, total bilirubin, alkaline phosphatase, ALT, AST, hemoglobin, white blood cell count, platelets, serum gastrin, potassium, sodium, thyroxine and thyroid stimulating hormone [*see Clinical Pharmacology, Endocrine Effects (12)* for further information on thyroid effects]. Decreases were seen in hemoglobin, white blood cell count, platelets, potassium, sodium, and thyroxine.

In clinical trials using combination therapy with NEXIUM plus amoxicillin and clarithromycin, no additional increased laboratory abnormalities particular to these drug combinations were observed.

For more information on laboratory changes with amoxicillin or clarithromycin, refer to their package inserts, *Adverse Reactions* section.

6.4 Postmarketing Experience

The following adverse reactions have been identified during post-approval use of NEXIUM. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Postmarketing Reports - There have been spontaneous reports of adverse reactions with postmarketing use of esomeprazole. These reports occurred rarely and are listed below by body system:

Blood And Lymphatic System Disorders: agranulocytosis, pancytopenia; ***Eye Disorders:*** blurred vision; ***Gastrointestinal Disorders:*** pancreatitis; stomatitis; ***Hepatobiliary Disorders:*** hepatic failure, hepatitis with or without jaundice; ***Immune System Disorders:*** anaphylactic reaction/shock; ***Infections and Infestations:*** GI candidiasis; ***Musculoskeletal And Connective Tissue Disorders:*** muscular weakness, myalgia; ***Nervous System Disorders***: hepatic encephalopathy, taste disturbance; ***Psychiatric Disorders:*** aggression, agitation, depression, hallucination; ***Renal and Urinary Disorders***: interstitial nephritis; ***Reproductive System and Breast Disorders:*** gynecomastia; ***Respiratory, Thoracic and Mediastinal Disorders:*** bronchospasm; ***Skin and Subcutaneous Tissue Disorders:*** alopecia, erythema multiforme, hyperhidrosis, photosensitivity, Stevens-Johnson syndrome, toxic epidermal necrolysis (TEN, some fatal).

7 DRUG INTERACTIONS

Effects on absorption

Esomeprazole inhibits gastric acid secretion. Therefore, esomeprazole may interfere with the absorption of drugs where gastric pH is an important determinant of bioavailability (e.g., ketoconazole, iron salts and digoxin).

Concomitant use of atazanavir and proton pump inhibitors is not recommended. Co-administration of atazanavir with proton pump inhibitors is expected to substantially decrease atazanavir plasma concentrations and thereby reduce its therapeutic effect.

Effects on hepatic metabolism/cytochrome P-450 pathways

Esomeprazole is extensively metabolized in the liver by CYP2C19 and CYP3A4.

In vitro and *in vivo* studies have shown that esomeprazole is not likely to inhibit CYPs 1A2, 2A6, 2C9, 2D6, 2E1 and 3A4. No clinically relevant interactions with drugs metabolized by these CYP enzymes would be expected. Drug interaction studies have shown that esomeprazole does not have any clinically significant interactions with phenytoin, warfarin, quinidine, clarithromycin or amoxicillin. Post-marketing reports of changes in prothrombin measures have been received among patients on concomitant warfarin and esomeprazole therapy. Increases in INR and prothrombin time may lead to abnormal bleeding and even death. Patients treated with proton pump inhibitors and warfarin concomitantly may need to be monitored for increases in INR and prothrombin time.

Esomeprazole may potentially interfere with CYP2C19, the major esomeprazole metabolizing enzyme. Coadministration of esomeprazole 30 mg and diazepam, a CYP2C19 substrate,

resulted in a 45% decrease in clearance of diazepam. Increased plasma levels of diazepam were observed 12 hours after dosing and onwards. However, at that time, the plasma levels of diazepam were below the therapeutic interval, and thus this interaction is unlikely to be of clinical relevance.

Concomitant administration of esomeprazole and a combined inhibitor of CYP2C19 and CYP3A4, such as voriconazole, may result in more than doubling of the esomeprazole exposure. Dose adjustment of esomeprazole is not normally required. However, in patients with Zollinger-Ellison's Syndrome, who may require higher doses up to 240 mg/day, dose adjustment may be considered.

Other pharmacokinetic observations
Coadministration of oral contraceptives, diazepam, phenytoin, or quinidine did not seem to change the pharmacokinetic profile of esomeprazole.

Studies evaluating concomitant administration of esomeprazole and either naproxen (non-selective NSAID) or rofecoxib (COX-2 selective NSAID) did not identify any clinically relevant changes in the pharmacokinetic profiles of esomeprazole or these NSAIDs.

Combination Therapy with Clarithromycin
Co-administration of esomeprazole, clarithromycin, and amoxicillin has resulted in increases in the plasma levels of esomeprazole and 14-hydroxyclarithromycin. [*See Clinical Pharmacology, Pharmacokinetics: Combination Therapy with Antimicrobials. (12.4)*]

Concomitant administration of clarithromycin with pimozide is contraindicated. (See clarithromycin package insert.)

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Pregnancy Category B
Reproductive studies in rats and rabbits with NEXIUM (esomeprazole) and multiple cohort studies in pregnant women with omeprazole use during the first trimester do not show an increased risk of congenital anomalies or adverse pregnancy outcomes. There are no adequate and well controlled studies of NEXIUM use in pregnancy. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Esomeprazole is the s-isomer of omeprazole. In four population-based cohort studies that included 1226 women exposed during the first trimester of pregnancy to omeprazole there was no increased risk of congenital anomalies.

Reproductive studies with esomeprazole have been performed in rats at doses up to 57 times the human dose and in rabbits at doses up to 35 times the human dose and have revealed no evidence of impaired fertility or harm to the fetus. See Animal Toxicology and/or Pharmacology (13.2).

Reproductive studies conducted with omeprazole on rats at oral doses up to 56 times the human dose and in rabbits at doses up to 56 times the human dose did not show any evidence of teratogenicity. In pregnant rabbits, omeprazole at doses about 5.5 to 56 times the human dose produced dose-related increases in embryo-lethality, fetal resorptions, and pregnancy loss. In rats treated with omeprazole at doses about 5.6 to 56 times the human dose, dose-related embryo/fetal toxicity and postnatal developmental toxicity occurred in offspring.

8.3 Nursing Mothers

The excretion of esomeprazole in milk has not been studied. However, omepraozle concentrations have been measured in breast milk of one woman taking omeprazole 20 mg per day. The infant experienced no adverse effects and received 0.9% of the maternal daily dose.

8.4 Pediatric Use

Use of NEXIUM in pediatric and adolescent patients 1 to 17 years of age for short-term treatment of GERD is supported by a) extrapolation of results, already included in the currently approved labeling, from adequate and well-controlled studies that supported the approval of NEXIUM for adults, and b) safety and pharmacokinetic studies performed in pediatric and adolescent patients. [*See Clinical Pharmacology, Pharmacokinetics, Pediatric* for pharmacokinetic information *(12.3)* and *Dosage and Administration (2), Adverse Reactions (6.1) and Clinical Studies, (14.6)]*. The safety and effectiveness of NEXIUM for the treatment of symptomatic GERD in patients <1 year of age have not been established. The safety and effectiveness of NEXIUM for other pediatric uses have not been established.

8.5 Geriatric Use

Of the total number of patients who received NEXIUM in clinical trials, 1459 were 65 to 74 years of age and 354 patients were ≥ 75 years of age.

No overall differences in safety and efficacy were observed between the elderly and younger individuals, and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out.

10 OVERDOSAGE

A single oral dose of esomeprazole at 510 mg/kg (about 103 times the human dose on a body surface area basis), was lethal to rats. The major signs of acute toxicity were reduced motor activity, changes in respiratory frequency, tremor, ataxia, and intermittent clonic convulsions.

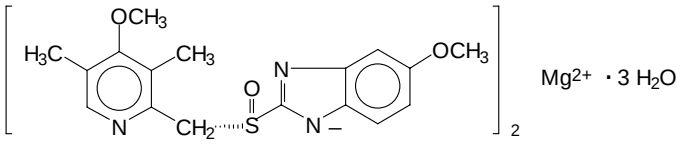
The symptoms described in connection with deliberate NEXIUM overdose (limited experience of doses in excess of 240 mg/day) are transient. Single doses of 80 mg of esomeprazole were uneventful. Reports of overdosage with omeprazole in humans may also be relevant. Doses ranged up to 2,400 mg (120 times the usual recommended clinical dose). Manifestations were variable, but included confusion, drowsiness, blurred vision, tachycardia, nausea, diaphoresis, flushing, headache, dry mouth, and other adverse reactions similar to those seen in normal clinical experience (see omeprazole package insert – *Adverse Reactions).* No specific antidote for esomeprazole is known. Since esomeprazole is extensively protein bound, it is not expected to be removed by dialysis. In the event of overdosage, treatment should be symptomatic and supportive.

As with the management of any overdose, the possibility of multiple drug ingestion should be considered. For current information on treatment of any drug overdose contact a Poison Control Center at 1-800-222-1222.

11 DESCRIPTION

The active ingredient in NEXIUM® (esomeprazole magnesium) Delayed-Release Capsules and NEXIUM (esomeprazole magnesium) For Delayed-Release Oral Suspension is bis(5-methoxy-2-[(S)-[(4-methoxy-3,5-dimethyl-2-pyridinyl)methyl]sulfinyl]-1*H*-benzimidazole-1-yl) magnesium trihydrate, a compound that inhibits gastric acid secretion. Esomeprazole is the S-isomer of omeprazole, which is a mixture of the S- and R- isomers. The Initial U.S. approval date of esomeprazole magnesium was 2001. Its molecular formula is $(C_{17}H_{18}N_3O_3S)_2Mg \times 3\ H_2O$ with molecular weight of 767.2 as a trihydrate and 713.1 on an anhydrous basis. The structural formula is:

Figure 1



The magnesium salt is a white to slightly colored crystalline powder. It contains 3 moles of water of solvation and is slightly soluble in water.

The stability of esomeprazole magnesium is a function of pH; it rapidly degrades in acidic media, but it has acceptable stability under alkaline conditions. At pH 6.8 (buffer), the half-life of the magnesium salt is about 19 hours at 25°C and about 8 hours at 37°C.

NEXIUM is supplied in delayed-release capsules and in packets for a delayed-release oral suspension. Each delayed-release capsule contains 20 mg, or 40 mg of esomeprazole (present as 22.3 mg, or 44.5 mg esomeprazole magnesium trihydrate) in the form of enteric-coated granules with the following inactive ingredients: glyceryl monostearate 40-55, hydroxypropyl cellulose, hypromellose, magnesium stearate, methacrylic acid copolymer type C, polysorbate 80, sugar spheres, talc, and triethyl citrate. The capsule shells have the following inactive ingredients: gelatin, FD&C Blue #1, FD&C Red #40, D&C Red #28, titanium dioxide, shellac, ethyl alcohol, isopropyl alcohol, n-butyl alcohol, propylene glycol, sodium hydroxide, polyvinyl pyrrolidone, and D&C Yellow #10.

Each packet of NEXIUM For Delayed-Release Oral Suspension contains 10 mg, 20 mg, or 40 mg of esomeprazole, in the form of the same enteric-coated granules used in NEXIUM Delayed-Release Capsules, and also inactive granules. The inactive granules are composed of the following ingredients: dextrose, xanthan gum, crospovidone, citric acid, iron oxide, and hydroxypropyl cellulose. The esomeprazole granules and inactive granules are constituted with water to form a suspension and are given by oral, nasogastric or gastric administration.

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

Esomeprazole is a proton pump inhibitor that suppresses gastric acid secretion by specific inhibition of the H^+/K^+-ATPase in the gastric parietal cell. The S- and R-isomers of omeprazole are protonated and converted in the acidic compartment of the parietal cell

forming the active inhibitor, the achiral sulphenamide. By acting specifically on the proton pump, esomeprazole blocks the final step in acid production, thus reducing gastric acidity. This effect is dose-related up to a daily dose of 20 to 40 mg and leads to inhibition of gastric acid secretion.

12.2 Pharmacodynamics

Antisecretory Activity

The effect of esomeprazole on intragastric pH was determined in patients with symptomatic gastroesophageal reflux disease in two separate studies. In the first study of 36 patients, NEXIUM 40 mg and 20 mg capsules were administered over 5 days. The results are shown in the following table:

Table 3
Effect on Intragastric pH on Day 5 (N=36)

Parameter	NEXIUM 40 mg	NEXIUM 20 mg
% Time Gastric pH >4[†] (Hours)	70%* (16.8 h)	53% (12.7 h)
Coefficient of variation	26%	37%
Median 24 Hour pH	4.9*	4.1
Coefficient of variation	16%	27%

[†] Gastric pH was measured over a 24-hour period
*p< 0.01 NEXIUM 40 mg vs NEXIUM 20 mg

In a second study, the effect on intragastric pH of NEXIUM 40 mg administered once daily over a five day period was similar to the first study, (% time with pH>4 was 68% or 16.3 hours).

Serum Gastrin Effects

The effect of NEXIUM on serum gastrin concentrations was evaluated in approximately 2,700 patients in clinical trials up to 8 weeks and in over 1,300 patients for up to 6-12 months. The mean fasting gastrin level increased in a dose-related manner. This increase reached a plateau within two to three months of therapy and returned to baseline levels within four weeks after discontinuation of therapy.

Enterochromaffin-like (ECL) Cell Effects

In 24-month carcinogenicity studies of omeprazole in rats, a dose-related significant occurrence of gastric ECL cell carcinoid tumors and ECL cell hyperplasia was observed in both male and female animals [*see Nonclinical Toxicology, Carcinogenesis, Mutagenesis, Impairment of Fertility (13.1)*] Carcinoid tumors have also been observed in rats subjected to fundectomy or long-term treatment with other proton pump inhibitors or high doses of H_2-receptor antagonists.

Human gastric biopsy specimens have been obtained from more than 3,000 patients treated with omeprazole in long-term clinical trials. The incidence of ECL cell hyperplasia in these studies increased with time; however, no case of ECL cell carcinoids, dysplasia, or neoplasia has been found in these patients.

In over 1,000 patients treated with NEXIUM (10, 20 or 40 mg/day) up to 6-12 months, the prevalence of ECL cell hyperplasia increased with time and dose. No patient developed ECL cell carcinoids, dysplasia, or neoplasia in the gastric mucosa.

Endocrine Effects

NEXIUM had no effect on thyroid function when given in oral doses of 20 or 40 mg for 4 weeks. Other effects of NEXIUM on the endocrine system were assessed using omeprazole studies. Omeprazole given in oral doses of 30 or 40 mg for 2 to 4 weeks had no effect on carbohydrate metabolism, circulating levels of parathyroid hormone, cortisol, estradiol, testosterone, prolactin, cholecystokinin or secretin.

12.3 Pharmacokinetics

Absorption

NEXIUM Delayed-Release Capsules and NEXIUM For Delayed-Release Oral Suspension contain a bioequivalent enteric-coated granule formulation of esomeprazole magnesium. Bioequivalency is based on a single dose (40 mg) study in 94 healthy male and female volunteers under fasting condition. After oral administration peak plasma levels (C_{max}) occur at approximately 1.5 hours (T_{max}). The C_{max} increases proportionally when the dose is increased, and there is a three-fold increase in the area under the plasma concentration-time curve (AUC) from 20 to 40 mg. At repeated once-daily dosing with 40 mg, the systemic bioavailability is approximately 90% compared to 64% after a single dose of 40 mg. The mean exposure (AUC) to esomeprazole increases from 4.32 µmol*hr/L on day 1 to 11.2 µmol*hr/L on day 5 after 40 mg once daily dosing.

The AUC after administration of a single 40 mg dose of esomeprazole is decreased by 43-53% after food intake compared to fasting conditions. Esomeprazole should be taken at least one hour before meals.

The pharmacokinetic profile of esomeprazole was determined in 36 patients with symptomatic gastroesophageal reflux disease following repeated once daily administration of 20 mg and 40 mg capsules of NEXIUM over a period of five days. The results are shown in the following table:

Table 4

Pharmacokinetic Parameters of NEXIUM on Day 5 Following Oral Dosing for 5 Days

Parameter* (CV)	NEXIUM 40 mg	NEXIUM 20 mg
AUC (μmol·h/L)	12.6 (42%)	4.2 (59%)
C_{max} (μmol/L)	4.7 (37%)	2.1 (45%)
T_{max} (h)	1.6	1.6
$t_{1/2}$ (h)	1.5	1.2

*Values represent the geometric mean, except the T_{max}, which is the arithmetic mean; CV = Coefficient of variation

Distribution

Esomeprazole is 97% bound to plasma proteins. Plasma protein binding is constant over the concentration range of 2-20 μmol/L. The apparent volume of distribution at steady state in healthy volunteers is approximately 16 L.

Metabolism

Esomeprazole is extensively metabolized in the liver by the cytochrome P450 (CYP) enzyme system. The metabolites of esomeprazole lack antisecretory activity. The major part of esomeprazole's metabolism is dependent upon the CYP2C19 isoenzyme, which forms the hydroxy and desmethyl metabolites. The remaining amount is dependent on CYP3A4 which forms the sulphone metabolite. CYP2C19 isoenzyme exhibits polymorphism in the metabolism of esomeprazole, since some 3% of Caucasians and 15-20% of Asians lack CYP2C19 and are termed Poor metabolizers. At steady state, the ratio of AUC in Poor metabolizers to AUC in the rest of the population (Extensive metabolizers) is approximately 2.

Following administration of equimolar doses, the S- and R-isomers are metabolized differently by the liver, resulting in higher plasma levels of the S- than of the R-isomer.

Excretion

The plasma elimination half-life of esomeprazole is approximately 1-1.5 hours. Less than 1% of parent drug is excreted in the urine. Approximately 80% of an oral dose of esomeprazole is excreted as inactive metabolites in the urine, and the remainder is found as inactive metabolites in the feces.

Pharmacokinetics: Combination Therapy with Antimicrobials

Esomeprazole magnesium 40 mg once daily was given in combination with clarithromycin 500 mg twice daily and amoxicillin 1000 mg twice daily for 7 days to 17 healthy male and female subjects. The mean steady state AUC and C_{max} of esomeprazole increased by 70% and 18%, respectively during triple combination therapy compared to treatment with esomeprazole alone. The observed increase in esomeprazole exposure during co-administration with clarithromycin and amoxicillin is not expected to produce significant safety concerns.

The pharmacokinetic parameters for clarithromycin and amoxicillin were similar during triple combination therapy and administration of each drug alone. However, the mean AUC and C_{max} for 14-hydroxyclarithromycin increased by 19% and 22%, respectively, during triple combination therapy compared to treatment with clarithromycin alone. This increase in exposure to 14-hydroxyclarithromycin is not considered to be clinically significant.

Special Populations

Geriatric

The AUC and C_{max} values were slightly higher (25% and 18%, respectively) in the elderly as compared to younger subjects at steady state. Dosage adjustment based on age is not necessary.

Pediatric

1 to 11 Years of Age

The pharmacokinetics of esomeprazole were studied in pediatric patients with GERD aged 1 to 11 years.

Following once daily dosing for 5 days, the total exposure (AUC) for the 10 mg dose in patients aged 6 to 11 years was similar to that seen with the 20 mg dose in adults and adolescents aged 12 to 17 years. The total exposure for the 10 mg dose in patients aged 1 to 5 years was approximately 30% higher than the 10 mg dose in patients aged 6 to 11 years. The total exposure for the 20 mg dose in patients aged 6 to 11 years was higher than that observed with the 20 mg dose in 12 to 17 year-olds and adults, but lower than that observed with the 40 mg dose in 12 to 17 year-olds and adults.

Table 5

Summary of PK Parameters in 1 to 11 Year Olds with GERD Following 5 Days of Once-Daily Oral Esomeprazole Treatment

	1 to 5 Year Olds	6 to 11 Year Olds	
Parameter	**10 mg (N=8)**	**10 mg (N=7)**	**20 mg (N=6)**
AUC (μmol*h/L)*	4.83	3.70	6.28
C_{max} (μmol/L)*	2.98	1.77	3.73
t_{max} (h)†	1.44	1.79	1.75
$t_{½λz}$ (h)*	0.74	0.88	0.73
Cl/F (L/h)*	5.99	7.84	9.22

*Geometric mean; †arithmetic mean

12 to 17 Years of Age

The pharmacokinetics of esomeprazole were studied in 28 adolescent patients with GERD aged 12 to 17 years inclusive, in a single center study. Patients were randomized to receive esomeprazole 20 mg or 40 mg once daily for 8 days. Mean C_{max} and AUC values of esomeprazole were not affected by body weight or age; and more than dose-proportional increases in mean C_{max} and AUC values were observed between the two dose groups in the study. Overall, esomeprazole pharmacokinetics in adolescent patients aged 12 to 17 years were similar to those observed in adult patients with symptomatic GERD.

Table 6

Comparison of PK Parameters in 12 to 17 Year Olds with GERD and Adults with Symptomatic GERD Following the Repeated Daily Oral Dose Administration of Esomeprazole*

	12 to 17 Year Olds (N=28)		Adults (N=36)	
Parameter	**20 mg**	**40 mg**	**20 mg**	**40 mg**
AUC (μmol*h/L)	3.65	13.86	4.2	12.6
C_{max} (μmol/L)	1.45	5.13	2.1	4.7
t_{max} (h)	2.00	1.75	1.6	1.6
$t_{½λz}$ (h)	0.82	1.22	1.2	1.5

Data presented are geometric means for AUC, C_{max} and $t_{½λz}$, and median value for t_{max}.
*Duration of treatment for 12 to 17 year olds and adults were 8 days and 5 days, respectively. Data were obtained from two independent studies.

Gender

The AUC and C_{max} values were slightly higher (13%) in females than in males at steady state. Dosage adjustment based on gender is not necessary.

Hepatic Insufficiency

The steady state pharmacokinetics of esomeprazole obtained after administration of 40 mg once daily to 4 patients each with mild (Child Pugh A), moderate (Child Pugh Class B), and severe (Child Pugh Class C) liver insufficiency were compared to those obtained in 36 male and female GERD patients with normal liver function. In patients with mild and moderate hepatic insufficiency, the AUCs were within the range that could be expected in patients with normal liver function. In patients with severe hepatic insufficiency the AUCs were 2 to 3 times higher than in the patients with normal liver function. No dosage adjustment is recommended for patients with mild to moderate hepatic insufficiency (Child Pugh Classes A and B). However, in patients with severe hepatic insufficiency (Child Pugh Class C) a dose of 20 mg once daily should not be exceeded [*See Dosage and Administration (2)*].

Renal Insufficiency

The pharmacokinetics of esomeprazole in patients with renal impairment are not expected to be altered relative to healthy volunteers as less than 1% of esomeprazole is excreted unchanged in urine.

12.4 Microbiology

Esomeprazole magnesium, amoxicillin and clarithromycin triple therapy has been shown to be active against most strains of *Helicobacter pylori (H. pylori) in vitro* and in clinical infections as described in the *Clinical Studies (14)* and *Indications and Usage (1)* sections.

Helicobacter

Helicobacter pylori: Susceptibility testing of *H. pylori* isolates was performed for amoxicillin and clarithromycin using agar dilution methodology, and minimum inhibitory concentrations (MICs) were determined.

Pretreatment Resistance: Clarithromycin pretreatment resistance rate (MIC ≥ 1 mcg/mL) to *H. pylori* was 15% (66/445) at baseline in all treatment groups combined. A total of > 99% (394/395) of patients had *H. pylori* isolates which were considered to be susceptible (MIC ≤ 0.25 mcg/mL) to amoxicillin at baseline. One patient had a baseline *H. pylori* isolate with an amoxicillin MIC = 0.5 mcg/mL.

Clarithromycin Susceptibility Test Results and Clinical/Bacteriologic Outcomes: The baseline *H. pylori* clarithromycin susceptibility results and the *H. pylori* eradication results at the Day 38 visit are shown in the table below:

Table 7

Clarithromycin Susceptibility Test Results and Clinical/Bacteriological Outcomes [a] for Triple Therapy - (Esomeprazole magnesium 40 mg once daily/amoxicillin 1000 mg twice daily/clarithromycin 500 mg twice daily for 10 days)

Clarithromycin Pretreatment Results		*H. pylori* negative (Eradicated)		*H. pylori* positive (Not Eradicated) Post-treatment susceptibility results			
				S[b]	I[b]	R[b]	No MIC
Susceptible[b]	182	162		4	0	2	14
Intermediate[b]	1	1		0	0	0	0
Resistant[b]	29	13		1	0	13	2

[a]Includes only patients with pretreatment and post-treatment clarithromycin susceptibility test results

[b]Susceptible (S) MIC ≤ 0.25 mcg/mL, Intermediate (I) MIC = 0.5 mcg/mL, Resistant (R) MIC ≥ 1.0 mcg/mL

Patients not eradicated of *H. pylori* following esomeprazole magnesium/amoxicillin/clarithromycin triple therapy will likely have clarithromycin resistant *H. pylori* isolates. Therefore, clarithromycin susceptibility testing should be done, when possible. Patients with clarithromycin resistant *H. pylori* should not be re-treated with a clarithromycin-containing regimen.

Amoxicillin Susceptibility Test Results and Clinical/Bacteriological Outcomes:
In the esomeprazole magnesium/amoxicillin/clarithromycin clinical trials, 83% (176/212) of the patients in the esomeprazole magnesium/amoxicillin/clarithromycin treatment group who had pretreatment amoxicillin susceptible MICs (≤ 0.25 mcg/mL) were eradicated of *H. pylori*, and 17% (36/212) were not eradicated of *H. pylori*. Of the 36 patients who were not eradicated of *H. pylori* on triple therapy, 16 had no post-treatment susceptibility test results and 20 had post-treatment *H. pylori* isolates with amoxicillin susceptible MICs. Fifteen of the patients who were not eradicated of *H. pylori* on triple therapy also had post-treatment *H. pylori* isolates with clarithromycin resistant MICs. There were no patients with *H. pylori* isolates who developed treatment emergent resistance to amoxicillin.

Susceptibility Test for Helicobacter pylori: The reference methodology for susceptibility testing of *H. pylori* is agar dilution MICs. One to three microliters of an inoculum equivalent to a No.2 McFarland standard (1×10^7 - 1×10^8 CFU/mL for *H. pylori*) are inoculated directly onto freshly prepared antimicrobial containing Mueller-Hinton agar plates with 5% aged defibrinated sheep blood (≥ 2 weeks old). The agar dilution plates are incubated at 35°C in a microaerobic environment produced by a gas generating system suitable for *Campylobacter*. After 3 days of incubation, the MICs are recorded as the lowest concentration of antimicrobial agent required to inhibit growth of the organism. The clarithromycin and amoxicillin MIC values should be interpreted according to the following criteria:

Table 8

Clarithromycin MIC (mcg/mL) [a]	Interpretation	
≤ 0.25	Susceptible	(S)
0.5	Intermediate	(I)
≥1.0	Resistant	(R)

Amoxicillin MIC (mcg/mL) [a,b]	Interpretation	
≤ 0.25	Susceptible	(S)

[a]These are breakpoints for the agar dilution methodology and they should not be used to interpret results obtained using alternative methods.

[b]There were not enough organisms with MICs > 0.25 mcg/mL to determine a resistance breakpoint.

Standardized susceptibility test procedures require the use of laboratory control microorganisms to control the technical aspects of the laboratory procedures. Standard clarithromycin and amoxicillin powders should provide the following MIC values:

Table 9

Microorganism	Antimicrobial Agent	MIC (mcg/mL) [a]
H. pylori ATCC 43504	Clarithromycin	0.016 – 0.12 (mcg/mL)

H. pylori ATCC 43504	Amoxicillin	0.016 – 0.12 (mcg/mL)

[a] These are quality control ranges for the agar dilution methodology and they should not be used to control test results obtained using alternative methods.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

The carcinogenic potential of esomeprazole was assessed using omeprazole studies. In two 24-month oral carcinogenicity studies in rats, omeprazole at daily doses of 1.7, 3.4, 13.8, 44.0 and 140.8 mg/kg/day (about 0.7 to 57 times the human dose of 20 mg/day expressed on a body surface area basis) produced gastric ECL cell carcinoids in a dose-related manner in both male and female rats; the incidence of this effect was markedly higher in female rats, which had higher blood levels of omeprazole. Gastric carcinoids seldom occur in the untreated rat. In addition, ECL cell hyperplasia was present in all treated groups of both sexes. In one of these studies, female rats were treated with 13.8 mg omeprazole/kg/day (about 5.6 times the human dose on a body surface area basis) for 1 year, then followed for an additional year without the drug. No carcinoids were seen in these rats. An increased incidence of treatment-related ECL cell hyperplasia was observed at the end of 1 year (94% treated vs 10% controls). By the second year the difference between treated and control rats was much smaller (46% vs 26%) but still showed more hyperplasia in the treated group. Gastric adenocarcinoma was seen in one rat (2%). No similar tumor was seen in male or female rats treated for 2 years. For this strain of rat no similar tumor has been noted historically, but a finding involving only one tumor is difficult to interpret. A 78-week mouse carcinogenicity study of omeprazole did not show increased tumor occurrence, but the study was not conclusive.

Esomeprazole was negative in the Ames mutation test, in the *in vivo* rat bone marrow cell chromosome aberration test, and the *in vivo* mouse micronucleus test. Esomeprazole, however, was positive in the *in vitro* human lymphocyte chromosome aberration test. Omeprazole was positive in the *in vitro* human lymphocyte chromosome aberration test, the *in vivo* mouse bone marrow cell chromosome aberration test, and the *in vivo* mouse micronucleus test.

The potential effects of esomeprazole on fertility and reproductive performance were assessed using omeprazole studies. Omeprazole at oral doses up to 138 mg/kg/day in rats (about 56 times the human dose on a body surface area basis) was found to have no effect on reproductive performance of parental animals.

13.2 Animal Toxicology and/or Pharmacology

Reproductive Toxicology Studies

Reproductive studies have been performed in rats at oral doses up to 280 mg/kg/day (about 57 times the human dose on a body surface area basis) and in rabbits at oral doses up to 86 mg/kg/day (about 35 times the human dose on a body surface area basis) and have revealed no evidence of impaired fertility or harm to the fetus due to esomeprazole.

Reproductive studies conducted with omeprazole in rats at oral doses up to 138 mg/kg/day (about 56 times the human dose on a body surface area basis) and in rabbits at doses up to 69 mg/kg/day (about 56 times the human dose on a body surface area basis) did not disclose any evidence for a teratogenic potential of omeprazole. In rabbits, omepraozle in a dose range of 6.9 to 69.1 mg/kg/day (about 5.5 to 56 times the human dose on a body surface area basis) produced dose-related increases in embryo-lethality, fetal resorptions, and pregnancy disruptions. In rats, dose-related embryo/fetal toxicity and postnatal developmental toxicity were observed in offspring resulting from parents treated with omeprazole at 13.8 to 138.0 mg/kg/day (about 5.6 to 56 times the human doses on a body surface area basis).

14 CLINICAL STUDIES

14.1 Healing of Erosive Esophagitis

The healing rates of NEXIUM 40 mg, NEXIUM 20 mg, and omeprazole 20 mg (the approved dose for this indication) were evaluated in patients with endoscopically diagnosed erosive esophagitis in four multicenter, double-blind, randomized studies. The healing rates at weeks 4 and 8 were evaluated and are shown in the table below:

Table 10
Erosive Esophagitis Healing Rate (Life-Table Analysis)

Study	No. of Patients	Treatment Groups	Week 4	Week 8	Significance Level *
1	588 588	NEXIUM 20 mg Omeprazole 20 mg	68.7% 69.5%	90.6% 88.3%	N.S.
2	654 656 650	NEXIUM 40 mg NEXIUM 20 mg Omeprazole 20 mg	75.9% 70.5% 64.7%	94.1% 89.9% 86.9%	$p < 0.001$ $p < 0.05$
3	576	NEXIUM 40 mg	71.5%	92.2%	N.S.

	572	Omeprazole 20 mg	68.6%	89.8%	
4	1216 1209	NEXIUM 40 mg Omeprazole 20 mg	81.7% 68.7%	93.7% 84.2%	p < 0.001

*log-rank test vs omeprazole 20 mg
N.S. = not significant (p > 0.05).

In these same studies of patients with erosive esophagitis, sustained heartburn resolution and time to sustained heartburn resolution were evaluated and are shown in the table below:

Table 11
Sustained Resolution‡ of Heartburn (Erosive Esophagitis Patients)

			Cumulative Percent# with Sustained Resolution		
Study	No. of Patients	Treatment Groups	Day 14	Day 28	Significance Level *
1	573 555	NEXIUM 20 mg Omeprazole 20 mg	64.3% 64.1%	72.7% 70.9%	N.S.
2	621 620 626	NEXIUM 40 mg NEXIUM 20 mg Omeprazole 20 mg	64.8% 62.9% 56.5%	74.2% 70.1% 66.6%	p <0.001 N.S.
3	568 551	NEXIUM 40 mg Omeprazole 20 mg	65.4% 65.5%	73.9% 73.1%	N.S.
4	1187 1188	NEXIUM 40 mg Omeprazole 20 mg	67.6% 62.5%	75.1% 70.8%	p <0.001

‡Defined as 7 consecutive days with no heartburn reported in daily patient diary.
#Defined as the cumulative proportion of patients who have reached the start of sustained resolution
*log-rank test vs omeprazole 20 mg
N.S. = not significant (p > 0.05).

In these four studies, the range of median days to the start of sustained resolution (defined as 7 consecutive days with no heartburn) was 5 days for NEXIUM 40 mg, 7-8 days for NEXIUM 20 mg and 7-9 days for omeprazole 20 mg.

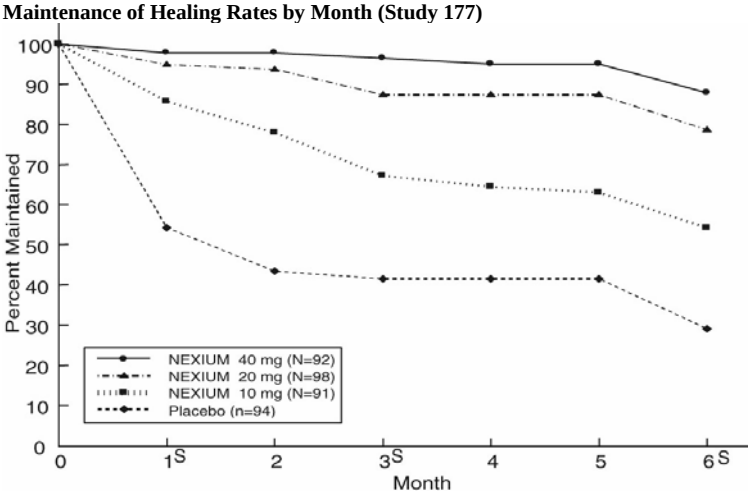
There are no comparisons of 40 mg of NEXIUM with 40 mg of omeprazole in clinical trials assessing either healing or symptomatic relief of erosive esophagitis.

Long-Term Maintenance of Healing of Erosive Esophagitis
Two multicenter, randomized, double-blind placebo-controlled 4-arm trials were conducted in patients with endoscopically confirmed, healed erosive esophagitis to evaluate NEXIUM 40 mg (n=174), 20 mg (n=180), 10 mg (n=168) or placebo (n=171) once daily over six months of treatment.

No additional clinical benefit was seen with NEXIUM 40 mg over NEXIUM 20 mg.

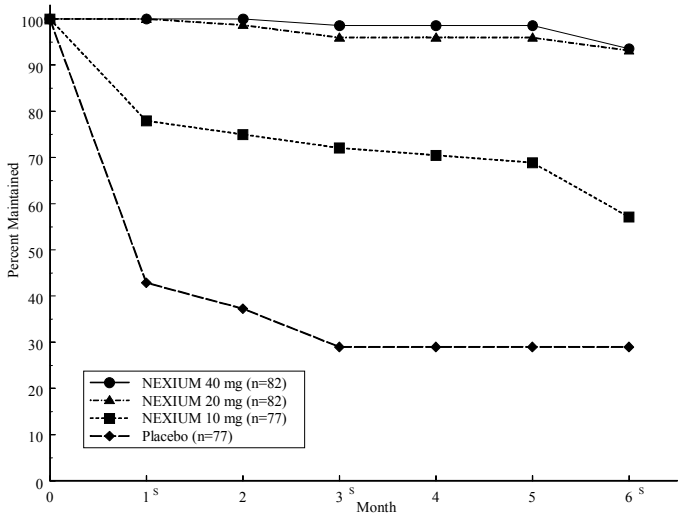
The percentage of patients that maintained healing of erosive esophagitis at the various time points are shown in the figures below:

Figure 2
Maintenance of Healing Rates by Month (Study 177)



s= scheduled visit

Figure 3
Maintenance of Healing Rates by Month (Study 178)



s= scheduled visit

Patients remained in remission significantly longer and the number of recurrences of erosive esophagitis was significantly less in patients treated with NEXIUM compared to placebo.

In both studies, the proportion of patients on NEXIUM who remained in remission and were free of heartburn and other GERD symptoms was well differentiated from placebo.

In a third multicenter open label study of 808 patients treated for 12 months with NEXIUM 40 mg, the percentage of patients that maintained healing of erosive esophagitis was 93.7% for six months and 89.4% for one year.

14.2 Symptomatic Gastroesophageal Reflux Disease (GERD)

Two multicenter, randomized, double-blind, placebo-controlled studies were conducted in a total of 717 patients comparing four weeks of treatment with NEXIUM 20 mg or 40 mg once daily versus placebo for resolution of GERD symptoms. Patients had ≥ 6-month history of heartburn episodes, no erosive esophagitis by endoscopy, and heartburn on at least four of the seven days immediately preceding randomization.

The percentage of patients that were symptom-free of heartburn was significantly higher in the NEXIUM groups compared to placebo at all follow-up visits (Weeks 1, 2, and 4).

No additional clinical benefit was seen with NEXIUM 40 mg over NEXIUM 20 mg.

The percent of patients symptom-free of heartburn by day are shown in the figures below:

Figure 4

Percent of Patients Symptom-Free of Heartburn by Day (Study 225)

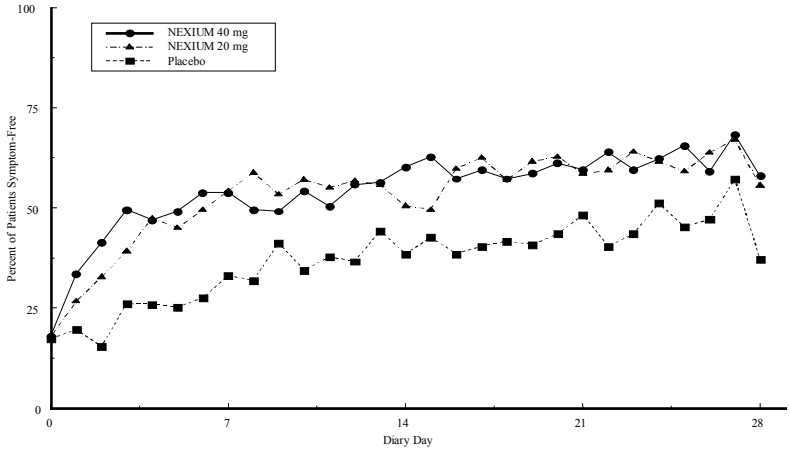
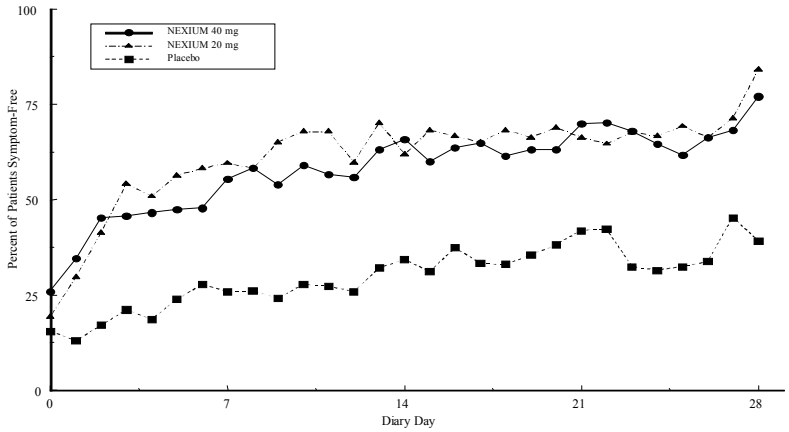


Figure 5

Percent of Patients Symptom-Free of Heartburn by Day
(Study 226)



In three European symptomatic GERD trials, NEXIUM 20 mg and 40 mg and omeprazole 20 mg were evaluated. No significant treatment related differences were seen.

14.3 Risk Reduction of NSAID-Associated Gastric Ulcer

Two multicenter, double-blind, placebo-controlled studies were conducted in patients at risk of developing gastric and/or duodenal ulcers associated with continuous use of non-selective and COX-2 selective NSAIDs. A total of 1429 patients were randomized across the 2 studies. Patients ranged in age from 19 to 89 (median age 66.0 years) with 70.7% female, 29.3% male, 82.9% Caucasian, 5.5% Black, 3.7% Asian, and 8.0% Others. At baseline, the patients in these studies were endoscopically confirmed not to have ulcers but were determined to be at risk for ulcer occurrence due to their age (≥60 years) and/or history of a documented gastric or duodenal ulcer within the past 5 years. Patients receiving NSAIDs and treated with NEXIUM 20 mg or 40 mg once-a-day experienced significant reduction in gastric ulcer occurrences relative to placebo treatment at 26 weeks. No additional benefit was seen with NEXIUM 40 mg over NEXIUM 20 mg. These studies did not demonstrate significant reduction in the development of NSAID-associated duodenal ulcer due to the low incidence.

Table 12
Cumulative percentage of patients without gastric ulcers at 26 weeks:

Study	No. of Patients	Treatment Group	% of Patients Remaining Gastric Ulcer Free[1]
1	191	NEXIUM 20 mg	95.4
	194	NEXIUM 40 mg	96.7
	184	Placebo	88.2
2	267	NEXIUM 20 mg	94.7
	271	NEXIUM 40 mg	95.3
	257	Placebo	83.3

[1] %= Life Table Estimate. Significant difference from placebo ($p<0.01$).

14.4 Helicobacter pylori (H. pylori) Eradication in Patients with Duodenal Ulcer Disease

Triple Therapy (NEXIUM/amoxicillin/clarithromycin): Two multicenter, randomized, double-blind studies were conducted using a 10 day treatment regimen. The first study (191) compared NEXIUM 40 mg once daily in combination with amoxicillin 1000 mg twice daily and clarithromycin 500 mg twice daily to NEXIUM 40 mg once daily plus clarithromycin 500 mg twice daily. The second study (193) compared NEXIUM 40 mg once daily in combination with amoxicillin 1000 mg twice daily and clarithromycin 500 mg twice daily to NEXIUM 40 mg once daily. *H. pylori* eradication rates, defined as at least two negative tests and no positive tests from CLOtest®, histology and/or culture, at 4 weeks post-therapy were significantly higher in the NEXIUM plus amoxicillin and clarithromycin group than in the NEXIUM plus clarithromycin or NEXIUM alone group. The results are shown in the following table:

Table 13
***H. pylori* Eradication Rates at 4 Weeks after 10 Day Treatment Regimen**
% of Patients Cured
[95% Confidence Interval]
(Number of Patients)

Study	Treatment Group	Per-Protocol[†]	Intent-to-Treat [‡]
191	NEXIUM plus	84%*	77%*

	amoxicillin and clarithromycin	[78, 89] (n=196)	[71, 82] (n=233)
	NEXIUM plus clarithromycin	55% [48, 62] (n=187)	52% [45, 59] (n=215)
193	NEXIUM plus amoxicillin and clarithromycin	85%** [74, 93] (n=67)	78%** [67, 87] (n=74)
	NEXIUM	5% [0, 23] (n=22)	4% [0, 21] (n=24)

† Patients were included in the analysis if they had *H. pylori* infection documented at baseline, had at least one endoscopically verified duodenal ulcer ≥ 0.5 cm in diameter at baseline or had a documented history of duodenal ulcer disease within the past 5 years, and were not protocol violators. Patients who dropped out of the study due to an adverse event related to the study drug were included in the analysis as not *H. pylori* eradicated.
‡ Patients were included in the analysis if they had documented *H. pylori* infection at baseline, had at least one documented duodenal ulcer at baseline, or had a documented history of duodenal ulcer disease, and took at least one dose of study medication. All dropouts were included as not *H. pylori* eradicated.
*$p < 0.05$ compared to NEXIUM plus clarithromycin
**$p < 0.05$ compared to NEXIUM alone

The percentage of patients with a healed baseline duodenal ulcer by 4 weeks after the 10 day treatment regimen in the NEXIUM plus amoxicillin and clarithromycin group was 75% (n=156) and 57% (n=60) respectively, in the 191 and 193 studies (per-protocol analysis).

14.5 Pathological Hypersecretory Conditions Including Zollinger-Ellison Syndrome

In a multicenter, open-label dose escalation study of 21 patients (15 males and 6 females, 18 Caucasian and 3 Black, mean age of 55.5 years) with pathological hypersecretory conditions, such as Zollinger-Ellison Syndrome, NEXIUM significantly inhibited gastric acid secretion. Initial dose was 40 mg twice daily in 19/21 patients and 80 mg twice daily in 2/21 patients. Total daily doses ranging from 80 mg to 240 mg for 12 months maintained gastric acid output below the target levels of 10 mEq/h in patients without prior gastric acid-reducing surgery and below 5 mEq/hr in patients with prior gastric acid-reducing surgery. At the Month 12 final visit, 18/20 (90%) patients had Basal Acid Output (BAO) under satisfactory control (median BAO = 0.17 mmol/hr). Of the 18 patients evaluated with a starting dose of 40 mg twice daily, 13 (72%) had their BAO controlled with the original dosing regimen at the final visit.

Table 14

Adequate Acid Suppression at final visit by Dose Regimen

NEXIUM dose at the Month 12 visit	BAO under adequate control at the Month 12 visit (N=20)*
40 mg twice daily	13/15
80 mg twice daily	4/4
80 mg three times daily	1/1

*One patient was not evaluated.

14.6 Pediatric GERD

1 to 11 Years of Age

In a multicenter, parallel-group study, 109 pediatric patients with a history of endoscopically-proven GERD (1 to 11 years of age; 53 female; 89 Caucasian, 19 Black, 1 Other) were treated with NEXIUM once daily for up to 8 weeks to evaluate safety and tolerability. Dosing by patient weight was as follows:

weight < 20 kg: once daily treatment with esomeprazole 5 mg or 10 mg
weight ≥ 20 kg: once daily treatment with esomeprazole 10 mg or 20 mg

Patients were endoscopically characterized as to the presence or absence of erosive esophagitis.

Of the 109 patients, 53 had erosive esophagitis at baseline (51 had mild, 1 moderate, and 1 severe esophagitis). Although most of the patients who had a follow up endoscopy at the end of 8 weeks of treatment healed, spontaneous healing cannot be ruled out because these patients had low grade erosive esophagitis prior to treatment, and the trial did not include a concomitant control.

12 to 17 Years of Age

In a multicenter, randomized, double-blind, parallel-group study, 149 adolescent patients (12 to 17 years of age; 89 female; 124 Caucasian, 15 Black, 10 Other) with clinically diagnosed GERD were treated with either NEXIUM 20 mg or NEXIUM 40 mg once daily for up to 8

weeks to evaluate safety and tolerability. Patients were not endoscopically characterized as to the presence or absence of erosive esophagitis.

15 REFERENCES

1. National Committee for Clinical Laboratory Standards. Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria That Grow Aerobically. Fifth Edition: Approved Standard NCCLS Document M7-A5, Vol. 20, no. 2, NCCLS, Wayne, PA, January 2000.

16 HOW SUPPLIED/STORAGE AND HANDLING

NEXIUM Delayed-Release Capsules, 20 mg, are opaque, hard gelatin, amethyst colored capsules with two radial bars in yellow on the cap and NEXIUM 20 mg in yellow on the body. They are supplied as follows:

NDC 0186-5020-31 unit of use bottles of 30
NDC 0186-5022-28 unit dose packages of 100
NDC 0186-5020-54 bottles of 90
NDC 0186-5020-82 bottles of 1000

NEXIUM Delayed-Release Capsules, 40 mg, are opaque, hard gelatin, amethyst colored capsules with three radial bars in yellow on the cap and NEXIUM 40 mg in yellow on the body. They are supplied as follows:

NDC 0186-5040-31 unit of use bottles of 30
NDC 0186-5042-28 unit dose packages of 100
NDC 0186-5040-54 bottles of 90
NDC 0186-5040-82 bottles of 1000

NEXIUM For Delayed-Release Oral Suspension is supplied as a unit dose packet containing a fine yellow powder, consisting of white to pale brownish esomeprazole granules and pale yellow inactive granules. NEXIUM unit dose packets are supplied as follows:

NDC 0186-4010-01 unit dose packages of 30: 10 mg packets
NDC 0186-4020-01 unit dose packages of 30: 20 mg packets
NDC 0186-4040-01 unit dose packages of 30: 40 mg packets

Store at 25°C (77°F); excursions permitted to 15 - 30°C (59 - 86°F). [See USP Controlled Room Temperature]. Keep NEXIUM Delayed-Release Capsules container tightly closed. Dispense in a tight container if the NEXIUM Delayed-Release Capsules product package is subdivided.

NEXIUM and the color purple as applied to the capsule are registered trademarks of the AstraZeneca group of companies.

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17 PATIENT COUNSELING INFORMATION

Patients should be informed of the following:

NEXIUM is available as a delayed-release capsule or as a delayed-release oral suspension. Directions for use specific to the route and available methods of administration for each of these dosage forms is presented below. NEXIUM should be taken at least one hour before meals.

<u>NEXIUM Delayed-Release Capsules</u>

NEXIUM Delayed-Release Capsules should be swallowed whole.

Alternatively, for patients who have difficulty swallowing capsules, one tablespoon of applesauce can be added to an empty bowl and the NEXIUM Delayed-Release Capsule can be opened, and the granules inside the capsule carefully emptied onto the applesauce. The granules should be mixed with the applesauce and then swallowed immediately. The applesauce used should not be hot and should be soft enough to be swallowed without chewing. The granules should not be chewed or crushed. The granules/applesauce mixture should not be stored for future use.

<u>NEXIUM For Delayed-Release Oral Suspension</u>

NEXIUM For Delayed-Release Oral Suspension should be administered as follows:

- Empty the contents of a 10 mg, 20 mg or 40 mg packet into a container containing 1 tablespoon (15 mL) of water.
- Stir.

- Leave 2 to 3 minutes to thicken.
- Stir and drink within 30 minutes.
- If any material remains after drinking, add more water, stir, and drink immediately.

For patients who have a nasogastric or gastric tube in place, NEXIUM For Delayed-Release Oral Suspension can be administered as follows:

- Add 15 mL of water to a catheter tipped syringe and then add the contents of a 10 mg, 20 mg or 40 mg NEXIUM packet. It is important to only use a catheter tipped syringe when administering NEXIUM through a nasogastric tube or gastric tube.
- Immediately shake the syringe and leave 2 to 3 minutes to thicken.
- Shake the syringe and inject through the nasogastric or gastric tube, French size 6 or larger, into the stomach within 30 minutes.
- Refill the syringe with 15 mL of water.
- Shake and flush any remaining contents from the nasogastric or gastric tube into the stomach.

Antacids may be used while taking NEXIUM.

Distributed by:
AstraZeneca LP
Wilmington, DE 19850

NEXIUM Delayed-Release Capsules are a product of France.

NEXIUM For Delayed-Release Oral Suspension is a product of Sweden.

PATIENT INFORMATION

NEXIUM® (nex-e-um) (esomeprazole magnesium)
Delayed-Release Capsules and Delayed-Release Oral Suspension

Read the Patient Information that comes with NEXIUM before you start taking it and each time you get a refill. There may be new information. This leaflet does not take the place of talking with your doctor about your medical condition or your treatment.

If you have any questions about NEXIUM, ask your doctor.

WHAT IS NEXIUM?
NEXIUM is a prescription medicine called a proton pump inhibitor (PPI).

NEXIUM is used in adults:

- to treat the symptoms of gastroesophageal reflux disease (GERD). NEXIUM may also be prescribed to heal acid-related damage to the lining of the esophagus (erosive esophagitis), and to help continue this healing.

  GERD is a chronic condition (lasts a long time) that occurs when acid from the stomach backs up into the esophagus (food pipe) causing symptoms, such as heartburn, or damage to the lining of the esophagus. Common symptoms include frequent heartburn that will not go away, a sour or bitter taste in the mouth, and difficulty swallowing.

- to reduce the risk of stomach ulcers in some people taking pain medicines called non-steroidal anti-inflammatory drugs (NSAIDs).
- to treat a stomach infection (Helicobacter pylori), along with the antibiotics amoxicillin and clarithromycin.
- for the long-term treatment of Zollinger-Ellison Syndrome. Zollinger-Ellison Syndrome is a rare condition in which the stomach produces a more than normal amount of acid.

For adolescents 12 to 17 years of age, NEXIUM may be prescribed for short-term treatment of GERD.

NEXIUM has not been shown to be safe and effective in children under the age of 12.

WHO SHOULD NOT TAKE NEXIUM?
Do not take NEXIUM if you:

- are allergic to any of the ingredients in NEXIUM. See the end of this leaflet for a complete list of ingredients in NEXIUM.
- are allergic to any other Proton Pump Inhibitor (PPI) medicine.

WHAT SHOULD I TELL MY DOCTOR BEFORE TAKING NEXIUM?
Tell your doctor about all your medical conditions, including if you:

- have liver problems
- are pregnant, think you may be pregnant, or are planning to become pregnant.
- are breastfeeding or planning to breastfeed. Talk with your doctor about the best way to feed your baby if you take NEXIUM.

Tell your doctor about all of the medicines you take including prescription and non-prescription drugs, vitamins and herbal supplements. NEXIUM may affect how other medicines work, and other medicines may affect how NEXIUM works. Especially tell your doctor if you take:

- warfarin (COUMADIN)
- ketoconazole (NIZORAL)
- voriconazole (VFEND)
- atazanavir (REYATAZ)
- products that contain iron
- digoxin (LANOXIN, LANOXICAPS)

HOW SHOULD I TAKE NEXIUM?

- Take NEXIUM exactly as prescribed by your doctor.
- Do not change your dose or stop NEXIUM without talking to your doctor.
- Take NEXIUM at least 1 hour before a meal.
- Swallow NEXIUM capsules whole. Never chew or crush NEXIUM.
- If you have difficulty swallowing NEXIUM capsules, you may open the capsule and empty the contents into a tablespoon of applesauce. Be sure to swallow the applesauce right away. Do not store it for later use.
- If you forget to take a dose of NEXIUM, take it as soon as you remember. If it is almost time for your next dose, do not take the missed dose. Take the next dose on time. Do not take a double dose to make up for a missed dose.
- If you take too much NEXIUM, tell your doctor right away.

- See the "Patient Instructions for Use" at the end of this leaflet for instructions how to take NEXIUM Delayed-Release Oral Suspension, and how to mix and give NEXIUM Delayed-Release Capsules and NEXIUM For Delayed-Release Oral Suspension, through a nasogastric tube or gastric tube.

WHAT ARE THE POSSIBLE SIDE EFFECTS OF NEXIUM?
The most common side effects with NEXIUM may include:

- Headache
- Diarrhea
- Nausea
- Gas
- Abdominal pain
- Constipation
- Dry mouth

Tell your doctor about any side effects that bother you or that do not go away. These are not all the possible side effects with NEXIUM. Talk with your doctor or pharmacist if you have any questions about side effects.

HOW SHOULD I STORE NEXIUM?

- Store NEXIUM at room temperature between 59°F to 86°F (15°C to 30°C).
- Keep the container of NEXIUM closed tightly.

Keep NEXIUM and all medicines out of the reach of children.

GENERAL ADVICE
Medicines are sometimes prescribed for purposes other than those listed in the Patient Information leaflet. Do not use NEXIUM for a condition for which it was not prescribed. Do not give NEXIUM to other people, even if they have the same symptoms you have. It may harm them.

This Patient Information leaflet provides a summary of the most important information about NEXIUM. For more information, ask your doctor. You can ask your doctor or pharmacist for information that is written for healthcare professionals. For more information, go to www.purplepill.com or call toll free 1-800-463-9486.

PATIENT INSTRUCTIONS FOR USE
For instructions on taking Delayed-Release Capsules, please see "**HOW SHOULD I TAKE NEXIUM**?"

Take NEXIUM Delayed-Release Oral Suspension as follows:

- Empty the contents of a packet into a container with 1 tablespoon (15 mL) of water
- Stir.
- Leave 2 to 3 minutes to thicken.
- Stir and drink within 30 minutes.

If any medicine remains after drinking, add more water, stir, and drink right away.

NEXIUM Delayed-Release Capsules and NEXIUM for Delayed-Release Oral Suspension may be given through a nasogastric tube (NG tube) or gastric tube, as prescribed by your doctor. Follow the instructions below:

NEXIUM Delayed-Release Capsules:

- Open the capsule and empty the granules into a 60 mL (cc) catheter tipped syringe. Mix with 50 mL (cc) of water. Use only a catheter tipped syringe to give NEXIUM through a NG tube.
- Replace the plunger and shake the syringe well for 15 seconds. Hold the syringe with the tip up and check for granules in the tip.
- Do not give the granules if they have dissolved or have broken into pieces.
- Attach the syringe to the NG tube and give the medicine in the syringe through the NG tube into the stomach.
- After giving the granules, flush the NG tube with more water.

NEXIUM For Delayed-Release Oral Suspension:

- Add 15 mL of water to a catheter tipped syringe and then add the contents of a NEXIUM packet (as instructed by your doctor). Use only a catheter tipped syringe to give NEXIUM through a NG tube or gastric tube.
- Shake the syringe right away and then leave it for 2 to 3 minutes to thicken.
- Shake the syringe and give the medicine through the NG or gastric tube (French size 6 or larger) into the stomach within 30 minutes.
- Refill the syringe with 15 mL (cc) of water.
- Shake and flush any remaining contents from the NG tube or gastric tube into the stomach.

WHAT ARE THE INGREDIENTS IN NEXIUM?
Active ingredient: esomeprazole magnesium trihydrate

Inactive ingredients in NEXIUM Delayed-Release Capsules (including the capsule shells): glyceryl monostearate 40-55, hydroxypropyl cellulose, hypromellose, magnesium stearate, methacrylic acid copolymer type C, polysorbate 80, sugar spheres, talc, triethyl citrate, gelatin, FD&C Blue #1, FD&C Red #40, D&C Red #28, titanium dioxide, shellac, ethyl alcohol, isopropyl alcohol, n-butyl alcohol, propylene glycol, sodium hydroxide, polyvinyl pyrrolidone, and D&C Yellow #10.

Inactive granules in NEXIUM Delayed-Release Oral Suspension: dextrose, xanthan gum, crospovidone, citric acid, iron oxide, and hydroxypropyl cellulose.

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