

## eMedicine Specialties > Dermatology > Diseases of the Oral Mucosa

# Geographic Tongue

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Updated: Dec 11, 2008

## Introduction

### Background

Geographic tongue (benign migratory glossitis) is a benign condition that occurs in up to 3% of the general population. Most often, patients are asymptomatic; however, some patients report increased sensitivity to hot and spicy foods. The etiology and pathogenesis are still poorly understood. The condition affects males and females and is noted to be more prominent in adults than in children.

The classic manifestation is an area of erythema, with atrophy of the filiform papillae of the tongue, surrounded by a serpiginous, white, hyperkeratotic border. The patient often reports spontaneous resolution of the lesion in one area, with the return of normal tongue architecture, only to have another lesion appear in a different location of the tongue. Lesion activity may wax and wane over time, and patients are occasionally free of lesions. If lesions occur at other mucosal sites, the condition is termed erythema migrans.

### Pathophysiology

The most commonly affected site is the tongue; however, other oral mucosal soft tissue sites may be affected. It has been reported with increased frequency in patients with psoriasis and in patients with fissured tongue. Although this is an inflammatory condition histologically, a polygenic mode of inheritance has been suggested because it is seen clustering in families. Associations with human leukocyte antigen (HLA)–DR5, HLA-DRW6, and HLA-Cw6 have also been reported.<sup>1</sup>

### Frequency

#### United States

This condition has reportedly occurred in up to 3% of the general population in the United States.

#### International

International frequency rates are similar to those reported in the United States.

### Mortality/Morbidity

Geographic tongue is a benign condition.

## Race

No racial or ethnic predilection is reported for this condition.

## Sex

Females have been reported to be affected twice as often as males. Exacerbations have been suggested to be related to hormonal factors.

## Age

Geographic tongue can affect all age groups; however, it is more predominant in adults than in children.

# Clinical

## History

- Patients with geographic tongue may present with a burning sensation or an irritation of the tongue noted with hot or spicy foods.
- Patients may report that the discomfort waxes and wanes over time, and they routinely describe that the lesions affect different areas of the tongue at different times.
- Patients are occasionally concerned about the diagnosis of oral cancer, which prompts them to be evaluated, despite reporting that they have noted these lesions over many years.

## Physical

- The tongue exhibits a well-demarcated area of erythema, primarily affecting the dorsum, and often extending to involve the lateral borders of the tongue.
- Within the area of erythema, the normal tongue architecture is effaced, walvato da Windows Internet Explorer 8> Subject: Geographic Tongue: [Print] - eMedicine Dermatology Date: Fri, 4 Sep 2009 01:06:15 +0200 MIME-Version: 1.0 Content-Type: multipart/related; type="text/html"; boundary="-----\_NextPart\_000\_0409\_01CA2CFB.E7010E60" X-MimeOLE: Produced By Microsoft MimeOLE V6.00.2900.5579 This is a multi-part message in MIME format. -----\_NextPart\_000\_0409\_01CA2CFB.E7010E60 Content-Type: text/html; charset="Windows-1252" Content-Transfer-Encoding: quoted-printable Content-Location: <http://emedicine.medscape.com/article/1078465-print>



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## Physical

- The tongue exhibits a well-demarcated area of erythema, primarily affecting the dorsum, and often extending to involve the lateral borders of the tongue.
- Within the area of erythema, the normal tongue architecture is effaced, with loss of the filiform papillae and atrophy of the overlying mucosa.
- Surrounding this area of erythema is a well-defined, hyperkeratotic, yellow-white border with an irregular serpiginous outline.
- Similar lesions may be present concurrently on other aspects of the tongue or other mucosal sites.

## Causes

- A definitive cause has not been elucidated, but lesions are seen with increased frequency in patients with psoriasis. In a study of patients with psoriasis, geographic tongue occurred in 10% of the patients, in contrast to only 2.5% of age- and sex-matched controls.<sup>2</sup>
- A polygenic mode of inheritance has been suggested.<sup>3</sup>
- No increased incidence has been noted with medication use or environmental agents.

# Differential Diagnoses

Burns, Chemical  
Cancers of the Oral Mucosa  
Candidiasis, Mucosal  
Contact Stomatitis  
Fissured Tongue

Lichen Planus  
Psoriasis, Plaque

## Workup

## Procedures

A biopsy is not usually necessary given the characteristic clinical presentation.

## Histologic Findings

Geographic tongue is described as a psoriasiform mucositis. At the periphery, elongation of the rete ridges is noted with associated hyperparakeratosis and acanthosis. Toward the center of the lesion, corresponding to the erythematous area clinically, loss of filiform papillae with migration and clustering of neutrophils within the epithelium (spongiform pustule) is seen. The predominant inflammatory infiltrate in the lamina propria is neutrophils with an admixture of chronic inflammatory cells.

## Treatment

### Medical Care

No medical intervention is required because the lesion is benign and most often asymptomatic.

### Consultations

Consultation with an oral pathologist is indicated if a question exists about the diagnosis.

## Follow-up

### Prognosis

Geographic tongue is a benign condition.

### Patient Education

Defining the condition, its clinical appearance, and reinforcing its benign nature is usually all that is needed to educate patients and allay any concerns they may have about geographic tongue.

## Miscellaneous

### Medicolegal Pitfalls

Because geographic tongue is a benign condition and diagnosed on its characteristic clinical appearance, medicolegal issues are not an issue.

## References