

## Idiopathic Scoliosis Prevalence Is 5 Times Less in Roma Than Greek Children and Adolescents

Panagiotis Smyrnis, MD, PhD<sup>a</sup>, Andreas Alexopoulos, MD, PhD<sup>b</sup>, Nick Sekouris, MD, PhD<sup>c,\*</sup>,  
Vasilios Dimitropoulos, MD, PhD<sup>d</sup>, Giorgos Scarpas, MD, PhD<sup>e</sup>, Giorgos Vlatis, MD, PhD<sup>e</sup>,  
George Papadopoulos, MD, PhD<sup>f</sup>

<sup>a</sup>Spine Department, General Hospital “KAT”, Athens, Greece

<sup>b</sup>Orthopedic Department, General Hospital “I & A Grigoriou”, Sparta, Greece

<sup>c</sup>Orthopedic Department, General Hospital “Athens Medical Centre”, Margaritas 25, Elliniko, 16777 Athens, Greece

<sup>d</sup>Orthopedic Department, Private Clinic of Larissa, Larissa, Greece

<sup>e</sup>Orthopedic Department, General Hospital “Asklepeio”, Athens, Greece

<sup>f</sup>Department of Agriculture, University of Athens, Athens, Greece

Received 12 August 2013; revised 15 October 2014; accepted 20 October 2014

---

### Abstract

**Study Design:** Serial screening of Roma children for idiopathic scoliosis.

**Objective:** To confirm or reject the observation that the prevalence of scoliosis is reduced in the Roma population and possibly to explain it.

**Materials and Methods:** The authors conducted serial screening for idiopathic scoliosis of 1,034 indigenous Roma children (542 boys and 492 girls), aged 4–18 years (857 children were aged 8–18 years) from 1997 to 2011. Age, height, weight, body mass index, years of schooling, and menarche for girls were recorded. Children were clinically examined for body asymmetries and a standing posteroanterior spinal radiograph was obtained in selected cases.

**Results:** Sixty Roma children (6%) had clinical humps. Single humps, according to location, were mostly benign and not related to progressive scoliotic curves. In children with right thoracic humps a left lumbar component could be overlooked. Of 60 children, only 4 (3 girls and 1 boy) with right thoracic and left lumbar or thoracolumbar humps had true progressive scoliotic curves with greater than 10° Cobb angle (prevalence rate, 0.35%). This is 5 times less than the rate of 1.5% in Greek children. One of these 4 children was young and had possible congenital scoliosis; the other 3 were early adolescents.

**Conclusions:** A substantial difference in the prevalence of scoliosis between Roma and Greek children was documented. The usual percentage of adolescent scoliosis found in the Greek population (approximately 15–17 cases/1,000 children) was not seen in this sample of Roma children.

© 2015 Scoliosis Research Society.

**Keywords:** Idiopathic scoliosis; Scoliosis screening; Scoliometer; Adams test

---

### Introduction

During 15 years of work at a large state pediatric orthopedic hospital, the authors had the opportunity to treat a wide variety of orthopedic disorders, including trauma, in children aged 2 months to 18 years. Among various ethnic

groups, they occasionally examined Roma children for various hip, knee, foot, upper extremity, or spine problems. None of the Roma children were diagnosed with idiopathic scoliosis. Later, this exception became more distinct within the authors' scoliosis units established in both a large pediatric hospital and a large general orthopedic and trauma state hospital.

The prevalence of idiopathic scoliosis in children aged 6–18 years, as derived from Greek and international screening programs, has been well documented and ranges from 1.5% to 2.5% for curves with 10° or greater Cobb angle when using the same basic generally accepted screening methods [1–13].

---

Author disclosures: PS (none); AA (none); NS (none); VD (none); GS (none); GV (none); GP (none).

\*Corresponding author. Orthopedic Department, General Hospital “Athens Medical Centre,” Margaritas 25, Elliniko, 16777 Athens, Greece—Margaritas 25, Elliniko, 16777, Athens, Greece. Tel.: +0030 6985010730.

E-mail address: [nick\\_sekouris@yahoo.com](mailto:nick_sekouris@yahoo.com) (N. Sekouris).

This apparent discrepancy in scoliosis prevalence between 2 populations (native Greek and Roma) living side by side for over 5–6 centuries seemed unusual and has not been previously investigated.

A unique (to the current authors' knowledge), decisive difference in prevalence of idiopathic scoliosis was presented by Segil [14] in Johannesburg, South Africa between Caucasian subjects (2% to 3%) and Bantu African subject (0.3%), widely known in those days for their extremely low living standards. Far fewer variances in scoliosis prevalence have been published between people on the mainland and Greek islands [6,8,9] and internationally [15,16]. In the United States no such differences between black and white or other ethnicities have been mentioned [1,2,7].

It seemed challenging to study the hypothesis that Roma children are resistant to developing scoliosis; the existence of such a natural immunity first had to be substantiated through screening of the Roma children. This proved to be a difficult endeavor because of the primitive living conditions of these people in remote semi-rural areas.

The researchers' purpose was to screen Roma children for scoliosis and compare the incidence of scoliosis with that of Greek children as reported in the scoliosis screening literature [6,9,11]. Some of the authors of this research (P.S. and A.A.) were involved in previous screening of Greek children [3,5,8]. Based on previous experience and following the same methodology, the current study was initiated in April 1997 and was completed in 2011. The screening proceeded slowly and cautiously, gradually improving as the researchers became familiarized with unusual circumstances and problems. Approval for this research was requested from and granted by the authors' institutional review boards.

## Background Data

The Gypsies, preferably called *Roma*, are a basically nomadic Caucasian race. They originally migrated from the border region between Iran and India to Europe around the 14th century (or earlier) and are now living mainly in Europe and the United States, speaking an Indic dialect in addition to the local language. Their total population in Greece is estimated to be around 55,000 according to the Ministry of Labor and Social Services. More than two-thirds of them live in middle and northern Greece, the part of the country annexed at the beginning of the previous century. These Roma of northern Greece are mixed with Roma of neighboring countries.

Approximately, 16,000 Roma live in the south, the "Old Greece," and are considered indigenous because their ancestry goes back over four centuries. About 12,000 of these indigenous Roma are urbanized within large Greek cities; their children are not the object of this study. Besides, they refuse examination by foreigners. The remaining approximately 4,000 are officially categorized as "established" (about 3,000) and "epochal" (marginally over 1,000). The established population lives close to large cities

in regions of flat fertile land, dispersed in semi-rural communities of 20–30 families, in simple barracks with low-quality, elementary facilities not substantially different from the homes of the epochal population.

Epochal Roma (about 1,100) and their approximately 700 children are the core interest of this study. They mainly live in mountainous rural areas in camps of 10–20 families. Their living conditions are harsh, lacking even the most basic home facilities, such as sitting chairs, toilets, and bathrooms for personal hygiene. They usually mate or marry at an early age within the tribe. Food is not a special problem. Parental care for youngsters could be described as primitive but good; children usually run around barefoot and lightly dressed all year long, and schooling is inefficient to nonexistent. Their home is a camp neighborhood similar to primitive or even contemporary remote tribal encampments.

They work in the fields, at local bazaars, and as scrap dealers or peddlers in the nearest town, often carrying the whole family in their trucks. Seasonal migration is customary. They obey a headman called a king or president, who is on good terms with local municipal authorities who provide basic health services in return for votes.

## Materials and Methods

This study began by examining children of from whole epochal group (681 Roma children). In a second stage, the researchers successively examined 353 children within 3 random samples from the established group. Access to these communities was gained through the local mayors and community welfare staff.

Six alternating orthopedic surgeons participated in examining and recording the data derived from the children: 2 senior surgeons with long experience in school screening procedures, 2 senior surgeons with special interest in spinal problems, and 2 consultants. At least 1 expert orthopedic surgeon was always present during the examinations. To prepare and implement this program, the authors had the assistance of a social worker and 1 or 2 nurses. The occasional presence of interested local orthopedic surgeons was welcome.

General orthopedic and spinal screening was carried out by the authors' group in local rudimentary medical facilities, schools, individual barracks, and outpatient clinics of local state hospitals. Screening included children aged 4–18 years so that no child who was age-prone to scoliosis would be neglected.

Until 2011, a total of 1,034 Roma children (542 boys and 492 girls) in good general health had been serially, randomly examined. Their age, gender, general demographics, body mass index (BMI), menarche for girls, and school attendance were recorded and compared with those recorded during similar Greek children's screenings [3,11].

After nurses completed the card with key demographic data, for first clinical assessment the child was examined in a private area, often with the parents or other siblings present.

Download English Version:

<https://daneshyari.com/en/article/4095350>

Download Persian Version:

<https://daneshyari.com/article/4095350>

[Daneshyari.com](https://daneshyari.com)