

# Immigrant syndrome

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## Abstract

Immigrant syndrome (or travel syndrome) is a series of syndromes and disorders of human body in response to the natural environmental changes when the immigrants or travelers leave from their native homeland to another region. This work for the first time reports the cause, disorders, epidemiology, management, prevention and healthcare of immigrant syndrome.

Immigrant syndrome (or travel syndrome), also known as Dr. Shen immigrant syndrome, is a series of syndromes and disorders of human body in response to the natural environmental changes that when the immigrants or travelers leave from their native homeland to another geographical region, the natural geographical factors and residential environmental factors will have direct and indirect effects on human body that could not soon adapted. It was first described by Dr. HaiYing Shen (Dr. Shin) in accordance with the medical experiences in international medical center.

The survival of human beings needs to adapt to the natural environments. The ability of human body adapts to natural environments comes from both innate and acquired factors. The innate adaptation is gotten through evolution. Andean Mountains and Tibet Plateau are the high altitude areas where are in less oxygen and low atmospheric pressure, the physiological activity and structure of thorax of the natives there have become stronger than those of the residents in the plain areas. The Inuit living in the Arctic Circle, despite in the low temperatures, can sleep in the open air with ease.

The acquired adaptation is acquired in response to the specific natural environmental factors. When the factors of natural geographical environments are changed, the stimuli of changes are reflected to hypothalamus through receptors, and hypothalamus dominates pituitary gland to regulate endocrine function in order to maintain the balance of body before and after changes. The acquirement of adaptability needs a long or short time course that varies with different individuals. It is related to individual health conditions that people in healthy state generally have higher adaptability than those weak and are competent in withstanding the changes of natural geographical environments.

## **1 Cause**

1.1 Air, air quality. When people who originally live in good air environment come into the contaminated air environment such as haze or dust, it will soon induce the discomfort of upper respiratory tract.

1.2 Water, the difference between pH and hardness of drinking water.

1.3 Soil, the difference between pH, minerals and trace elements, as well as the organic matters contained in soil.

1.4 Climate and meteorological factors, the difference in temperature, sunlight, and the dry and wet air humidity.

1.5 Atmospheric pressure, such as the altitude-related altitude sickness.

1.6 Minerals and trace elements. Minerals and trace elements are contained in water and soil and so contained in food. For instance, iodine is a dietary mineral and micronutrient which is abundant in the food supply in coastal regions but is rare in inland.

1.7 Biological factors. The environmental biological factors such as bacteria, fungi, dust mites, mosquito bites, ticks or other insects in environments can be allergic factors.

1.8 Food factors, involving the food factors due to drinking water and soil factors, and the difference food nutrients (e.g., polysaccharides, proteins, lipids and vitamins), and the difference in cooking and dietary habits. These factors can disturb the original balance of the intestinal environment and reduce the beneficial intestinal bacteria by a great number. The digestive enzymes in body can fully exert digestive functions on native foods but fails on allopatric foods.

1.9 Mental factors. Homesickness and the unfamiliar social environment may psychologically induce stress, anxiety and depression.

### 1.10 Other specific factors.

The difference between iodized salt areas and non-iodized salt areas.

Chemically contaminated areas, such as the pollution of hormone-disrupting chemicals.

## **2 Symptoms and disorders**

### 2.1 Respiratory disorders

The respiratory tract infections, including upper respiratory tract infections and lower respiratory tract infections (e.g., pneumonia, more in the aged), bronchitis, asthma (more in children and juveniles), and other acute and chronic respiratory diseases are the common respiratory diseases.

### 2.2 Gastrointestinal disorders

The most common gastrointestinal disorder is acute gastroenteritis, with the symptoms of vomiting, diarrhea and abdominal pain. Other disorders are loss of appetite, chronic diarrhea, constipation, chronic peptic ulcer, and gastrointestinal dysfunction including gastric dysfunction and irritable bowel syndrome. Intestinal flora imbalance can cause intestinal dysfunction.

### 2.3 Dermatoses

The common skin diseases are eczema, dermatitis, acne and ringworm.

### 2.4 Otorhinolaryngology

The common ENT diseases are tonsillitis, pharyngitis and laryngitis, rhinitis, sinusitis, and otitis media. These diseases are also considered upper respiratory tract infections.

### 2.5 Ophthalmology

The common diseases are conjunctivitis, dry eye syndrome, retinopathy (due to the disorder of nutrients and trace elements), and vision changes and fatigue.

### 2.6 Allergic diseases

Allergic skin diseases, allergic conjunctivitis, allergic rhinitis, allergic asthma, and anaphylactoid purpura are the common diseases. The allergens can exist in polluted air, in environmental biological factors such as dust mites, or in food factors.

### 2.7 Urinogenital system diseases

The common diseases are acute or chronic urinary tract infections. In women, the infections in reproductive system such as vaginitis or pelvic inflammatory disease may also occur. Contaminated air, humid climate, or environmental biological factors may induce infection.

## 2.8 Endocrine disorders

The environmental factors, nutritional factors and emotional factors, such as contaminated air, iodine intake, or psychological stress, all can be the cause of endocrine disorders, for instance, the toxic gases in contaminated air can cause endocrine dyscrasia indirectly after entering human body, and jet lag or climate change can disrupt menstrual cycles and induce irregular menstruation. The stimuli of factors are reflected to the hypothalamus which dominates pituitary gland to regulate endocrine function. The hypothalamus controls secretion of pituitary gland hormones, which can be classified as the branches hypothalamic–pituitary axis (HP axis) of adrenal (HPA), gonadal (HPG), thyroid (HPT), somatotrophic (HPS), and prolactin (HPP) axes.

The abnormal secretion of hypothalamic–pituitary hormones causes disorder of adrenal glands, islets, gonads, thyroid, etc. The disorder of sexual hormones may induce menstrual disorder, the reproductive system diseases such as hysteromyoma or oophoritic cyst, and breast diseases such as mammary gland hyperplasia and nodule in female; and induce sexual dysfunction in male and gynecomastia in pubertal male. In adult and elderly, the abnormal secretion of adrenal cortex can induce and aggravate hypertension, diabetes and gout.

Thyroid diseases can be induced due to changes of dietary iodine. Iodine is the essential element for the synthesis of thyroid hormones. Thyroid hormones influence metabolism, growth and development of body. The most common effects of high iodine on thyroid function are iodine-induced goiter, hyperthyroidism and thyroid nodules. Iodine deficiency induces hypothyroidism with the abnormality such as goiter, cretinism, or fibrocystic breast changes. Environmental and emotional factors can also be responsible for the induction of thyroid diseases. Thyroid diseases are more common in women.

## 2.9 Nutritional (vitamins and trace elements) and metabolic disorders

Vitamins have diverse biochemical functions that they participate in metabolism of cell and tissue, functioning as coenzymes or as regulators of mineral metabolism. The deficiency of vitamins and trace elements can be induced in the conditions of lack of intake, lack of absorption due to gastrointestinal disorders, and abnormalities in synthesis and metabolism due to endocrine disorders.

Vitamin D deficiency will cause rickets (children), skeletal malformations such as scoliosis in teenagers, osteomalacia (adults, pregnant and lactating women) or osteoporosis (the aged), and will increase the risk of other diseases such as autoimmune diseases (e.g., asthma).

#### 2.10 Cardiovascular diseases

The common diseases are hypertension and arrhythmias in the aged. Sinus tachycardia and atrial premature beat also occur in adolescent and women. Endocrine disorders of adrenal gland and thyroid, nutritional and metabolic disorders, and psychosocial factors can contribute to the attack of hypertension and arrhythmias.

#### 2.11 Motor system diseases

Endocrine and metabolic disorders and nutrient deficiency (vitamins and trace elements) contribute to the diseases of skeletons, joints, and muscles (including tendons and other soft tissues). The acute traumas such as fracture, dislocation or soft tissue injury (sprain) most commonly occur in male youth. The chronic strain (e.g., lumbar muscle strain), degenerative changes at cervical and lumbar vertebra and knee-joint, and arthritis (e.g., osteoarthritis, rheumatoid arthritis, or gout) occur in adults and elders.

#### 2.12 Mental and neuropsychological disorders

The unfamiliar social environment psychologically contributes to the induction of mental disorders, and the nutritional and metabolic disorders physically play the role that promotes the induction. The common disorders are stress, anxiety and depression, insomnia, and cephalalgia (e.g., migraine).

#### 2.13 Somatic symptom disorders

Nutritional and metabolic disorders contribute to somatic symptom disorder that have no physical causes but have symptoms such as palpitations, chest congestion, inappetence, sleep disorders, fatigue, or emaciation.

### **3 Epidemiology: infants, juveniles, women, men, and elders**

#### 3.1 Infants

The common diseases of infants are skin diseases such as eczema, upper respiratory tract infections, asthma, diarrhea, constipation, and rickets.

#### 3.2 Juveniles in puberty

The common diseases of juveniles are allergic disease, retinopathy, vision changes and fatigue, rickets and scoliosis.

### 3.3 Women

The common diseases of women are menstrual disorder, breast diseases of breast hyperplasia, nodules and cysts, acute and chronic inflammation and abnormally proliferative diseases of reproductive system (such as uterine fibroids and ovarian cysts), thyroid diseases, and somatic symptom disorder.

Pregnant and lactating women. The common diseases are osteomalacia caused by vitamin D deficiency and anemia caused by deficiency of iron and folic acid.

### 3.4 Men

The common diseases of men are skin diseases, acute and chronic motor system diseases, depression and migraine, fatigue and sexual dysfunction.

### 3.5 Elders

The common diseases of elders are respiratory tract infections, digestive disorder, soft tissue strain, arthritis, degenerative osteoarthritis, osteoporosis, hypertension, and somatic symptom disorder.

## **4 Management**

Regular checkup at medical institutions, early see doctors and get treatment in time. In regard to the principle of management, in addition to basic symptomatic treatments, the endocrine and nutritional metabolic disorders should be given sufficient attention, and the stable improvement on function is necessary such as that adjusts digestive enzymes and intestinal flora on digestive disorder cases.

## **5 Prevention**

People in healthy state get stronger adaptability to withstand environmental changes. Enhance physical fitness, have sports and have regular rests, and get adequate nutritional supplements are good for getting a stronger adaptability.

Warm tip <sup>\*\*\*</sup>: Because of the difference of iodine intake between iodized salt areas and non-iodized salt areas, bringing local salt will help for adaptation.

## **6 Healthcare: infants, juveniles, women, men, and elders**

## 6.1 Infants' healthcare

The sufficient nutritional supplements for infants can efficiently depress the morbidity of skin diseases, respiratory tract infections and allergic disease, and can prevent rickets. After correcting diarrhea and constipation, it also needs probiotics to improve digestion and absorption.

Warm tip <sup>\*\*\*</sup>: Bring infants for vaccination on schedule and ensure adequate nutritional supplements are requisite for healthy kids, so the principal attention of immigrant parents is to consult the relevant institutions and insure the process of vaccination, checkup and nutritional supplement for kids.

## 6.2 Juveniles' healthcare

Have adequate outdoor sports and get sufficient nutritional supplements to enhance physical fitness will help to prevent the attack of allergic disease, rickets and scoliosis, and help to protect vision and skeletal growth.

Warm tip <sup>\*\*\*</sup>: Juveniles have grown up from kids and they are always vivifying, so the slight abnormalities are prone to be neglected by themselves, it needs the careful attention of parents. Despite they have grown up from children, because the sufficient nutrients are required by juveniles in puberty, the checkup and supplement of nutrients (vitamin and trace elements) are also necessary.

The mentality of juveniles is so sensitive that the change of surrounding environments from familiar to unfamiliar will give them mental and emotional fluctuations, it needs parents and teachers give them beneficial direction and encouragement.

## 6.3 Women's healthcare

Regular checkup on breast and reproductive systems are necessary for women. As immigrate between iodized salt area and non-iodized salt area, the checkup on thyroid function is also necessary for women. Upon irregular menstruation, the disorder of hypothalamic–pituitary–gonadal axis induced by nutritional deficiencies should also be considered. Due to the consumption at menstrual period and the extra demands at pregnant and lactating period, the women need efficient and long-term supplements on vitamins, minerals and trace elements.

Warm tip <sup>\*\*\*</sup>: Because the femininity of women is timid, the troubles on health will psychologically give them stress, fear and anxiety, especially as they come to an unfamiliar social environment that makes them feel isolated, so they need early checkup and treatment for recovery

of health. Moreover, they are psychologically expected that visit doctor accompanied with their sex partners, and the psychological comforts from partners are also required to relieve their psychological stress. “**Partners-expectation**” is termed by Dr. HaiYing Shen (Dr. Shin) to describe the women’s psychological expectation of the company and comfort from their sex partners as they encounter disease.

#### 6.4 Men’s healthcare

The sufficient dietary nutritional supplements and adequate fitness training will help men to prevent motor system diseases. The higher working pressure can affect hypothalamic-pituitary hormone secretion, so the moderate entertainment and leisure sports which play the role that release stress and relieve fatigue are good for men’s healthy mental state and sexual function.

Warm tip \*^^\*: Because the men are strong and brave, the men’s healthcare is commonly ignored compared to the more attentions on the healthcare of kids, women and the elder. But in fact, because of the physiologically higher metabolic level of men, the heavy work and family responsibility of men, and the high self-discipline of men, the more sufficient nutritional supplements are required to maintain the metabolic balance and the energetic metabolic level of men. The deficiency on vitamins, minerals and trace elements are also commonly found in adult males, but not merely in kids and women.

As encountering discomfort, distinct with the anxious mentality of women, the men commonly endure in silence because of the men’s willpower, and see doctor usually lonely till they fail to overcome them, which causes disorders progressed and postponed, and so some potential disorders could not be cured until they have turned elder when the disorders had become aggravated and hard to correct due to the age. “Men’s healthcare— do not ignored” is advised by Dr. HaiYing Shen (Dr. Shin) to remind people that men’s healthcare should be given full attention but not ignored that the adult males also require the health checkup and administration on time and in time.

#### 6.5 Elders’ healthcare

The acute respiratory tract infections especially lower respiratory tract infections and the acute gastrointestinal disorders should be paid more attention, and the effective treatment should be given as soon as possible. In regard to chronic diseases and senile diseases, long-period and stable symptomatic treatments are necessary, and the adjuvant therapy of nutritional supplements and immunity enhancement are also required to improve fitness quality.



Warm tip <sup>^^</sup>: The elders have accustomed to the life on homeland, and even though they try to do self-adjustment, their adaptability and immunity of body are not as strong as the youth due to age, so the early and effective treatment is requisite for elders. And as their health encounters problems, they dislike loneliness and long for company and care of family.

## **7 Initiatives: attention on immigrant healthcare**

Health is an important aspect of the quality of immigrant life. Appeal to governments, organizations and communities, as well as charities, to give immigrants more attention and support on checkup and treatment, and pay more sympathy and care for children, adolescents, women, and the frail and elder. It is also advocated that medical insurers can improve the insurance that covers the healthcare of immigrant syndrome, involving nutritional and metabolic treatments.