WHAT IS MEANT BY THE TERM “ALPHA-1 CARRIER, MZ or MS ALPHA”?

An Alpha-1 Carrier is a person who has one normal alpha-1 gene (M) and one defective Alpha-1 gene (usually S or Z). Being a carrier is very common. Most Alpha-1 Carriers are MS or MZ. Carriers may have lower blood levels of Alpha-1 Antitrypsin protein, but their levels are rarely as low as those of people with Alpha-1.

CHILDREN OF ALPHA-1 CARRIERS

Alpha-1 Carriers may pass their defective Alpha-1 gene to their children.

- If a carrier (MZ) has a child or children with a person who has normal Alpha-1 genes (MM), each child has one chance in two (50% risk) of being an Alpha-1 Carrier (MZ). There is no risk that any of the children will have the condition.
- If a carrier (MZ) has children with another carrier(MZ), each child has one chance in two (50% risk) of being an Alpha-1 Carrier. Each child also has one chance in four (25% risk) of having Alpha-1 (ZZ) and one chance in four of having normal Alpha-1 genes (MM).

HOW CAN BEING AN ALPHA-1 CARRIER AFFECT YOUR LUNGS?

Alpha-1 Carriers usually have only a slight risk of developing a disease related to Alpha-1. The main type of carrier linked to increased risk for lung diseases has MZ genes. Currently, there is no known risk for lung diseases for MS carriers.

LUNG DISEASE

The risk for emphysema may be greater for MZ carriers. This increased risk, however, is very small unless the carrier is a smoker or exposed to high levels of air pollution. The risk of having Chronic Obstructive Pulmonary Disease (COPD) is higher among MZ carriers who have relatives with COPD. This suggests that the COPD in these families may be due to other genetic factors. There is no scientific evidence that MS carriers are at risk for lung disease.

LUNG SYMPTOMS THAT MIGHT BE LINKED TO BEING AN ALPHA-1 CARRIER

- Shortness of breath
- Wheezing
- Chronic cough and sputum (phlegm) production(chronic bronchitis)
- Recurring chest colds
- Decreased exercise tolerance
- Non-responsive asthma or year-round allergies
- Bronchiectasis

HOW CAN BEING AN ALPHA-1 CARRIER AFFECT YOUR LIVER?

Alpha-1 Carriers usually have only a slight risk of developing a disease related to Alpha-1. The main type of carrier linked to increased risk for liver diseases has MZ genes. Currently, there is no known risk for liver diseases for MS carriers.

LIVER DISEASE

The risk of chronic liver disease in Alpha-1 Carriers is much less than that for people with Alpha-1. Research suggests that chronic liver disease might appear in MZ carriers only when the liver has been damaged first by something else, such as a virus, chemicals including alcohol or being overweight. There is no scientific evidence that MS carriers are at risk for liver disease.

Footnote: Sometimes medically trained people use the word heterozygote instead of the word carrier.