

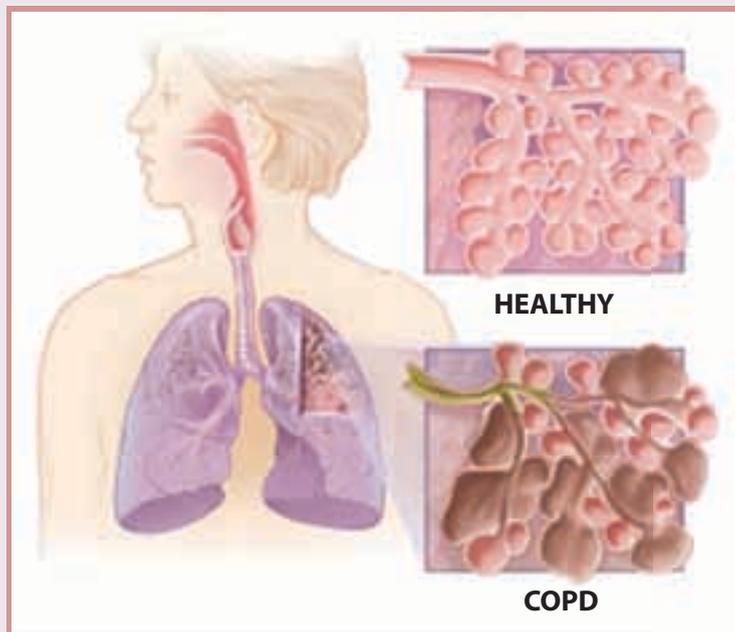


Inhaled Corticosteroids for COPD Decrease Mortality Risk from Pneumonia and other Causes

Treatment of COPD with inhaled corticosteroids (ICS) may decrease the risk of dying from pneumonia and from other causes despite being associated with an increase in the occurrence of pneumonia, according to a new meta-analysis presented at the 2015 American Thoracic Society International Conference.

This systematic review and meta-analysis of 38 studies echoes individual studies shows that, while ICS use may increase the risk of pneumonia in COPD patients, it lowers the risk of both pneumonia-associated and overall mortality. This benefit may be due to the immunosuppressive and anti-inflammatory effects of ICS treatment.

Twenty nine randomized controlled trials and nine observational studies were included in the study. In both randomized and observational



studies, ICS use was associated with an increased risk of pneumonia in analyses that were not adjusted for possible confounding factors. In six randomized trials, ICS use was not associated with an increase in pneumonia-associated mortality, and in seven observational studies, it was associated with a significant decrease.

Similar patterns were observed for all-cause mortality, with no increase in overall mortality seen in 29 randomized trials, and a significant decrease seen in six observational studies. "The increase in pneumonia incidence seen with ICS treatment for COPD appears to be counterbalanced by a decrease in mortality," is said by the researcher. He also added, this data can be used to weigh the overall risks and benefits of ICS use in COPD patients."

ICS Most Effective for Persistent Asthma in Children

While both inhaled corticosteroids (ICS) and leukotriene receptor antagonists (LTRA) have been proven to help control mild-to-moderate persistent asthma in school-age children, a new study published in the *Journal of Allergy & Clinical Immunology* January 2016 issue shows ICS may be the more effective treatment to control the situation.

The 16-week study was conducted as a multi-center, double-masked, 2-sequence cross over trial by the National Heart, Lung and Blood Institute (NHLBI) Childhood Asthma Research and Education (CARE) Network. Researches, led by Robert S. Zeiger, MD, PhD, from the University of California San Diego Department of Pediatrics, administered an ICS (fluticasone propionate) twice daily or an LTRA (montelukast) nightly to more than 100 children ages 6 to 17 who had mild-to-moderate persistent asthma. They found both fluticasone and montelukast led to significant improvements in many measures of asthma control. However, similar to earlier research they found strong evidence of greater mean improvements after 8 weeks of therapy with an ICS compared with a LTRA across many other outcomes. Patients taking ICS experienced more asthma control days (ACD) in which they had no daytime or night time asthma symptoms, along with better pulmonary responses and inflammatory biomarkers. As a comparison, 29.3 % of participants in the fluticasone group had at least one more ACD per week during treatment compared with 12.2 % of participants in the montelukast group.



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New Guidelines for Severe Asthma Provide Updated Treatment, Definition of Disease

A new guideline produced by a joint task force of the European Respiratory Society and the American Thoracic Society has provided an updated definition of severe asthma along with new recommendations for treating the condition

The guideline defines severe asthma as "asthma which requires treatment with high dose inhaled corticosteroids (ICS) plus a second controller (long acting β 2 agonist [LABA], leukotriene modifier, theophylline or systemic corticosteroids) to prevent it from becoming uncontrolled or which remains uncontrolled despite this therapy."

The guideline also provides a detailed discussion of the classification (phenotyping) of patients with severe asthma as evidence suggests that severe asthma affects people in different ways.

Based on clinical and certain biological features of the condition recent research has started to group severe asthma into different types. These findings can help researchers develop targeted treatments for this group of people whose asthma remains difficult to treat despite taking the recommended therapies. The guideline encourages continuing research into phenotyping severe asthma and finding more effective treatments aimed particularly at specific phenotypes of severe asthma. The document has produced recommendations using the GRADE (Grading of



Recommendations, Assessment, Development and Evaluation) method on the evaluation and treatment of severe asthma. Anti-IgE treatment, methotrexate, anti-fungal treatment, macrolide antibiotics and bronchial thermoplasty have been recommended for use in severe asthma.

Co-lead author, Professor Fan Chung, from Imperial College London and the Royal Brompton Hospital said: "This new guideline provides a platform to help us understand severe asthma and how to treat it. As the evidence available for the field of severe asthma is

only just emerging, we must take the opportunity to build on this knowledge and increase our efforts to ultimately provide personalized medicine to people with this condition."

Guy Brusselle, Guidelines Director for the European Respiratory Society, said: "Although severe asthma cases are a relatively smaller proportion of all asthma cases, people with this condition can experience breathlessness all the time, as well as frequent and severe asthma attacks, requiring hospitalization. This seriously impairs quality of life for an individual and represents a huge financial burden for society. These new guidelines provide recommendations for an approach to diagnose and treat the condition and it's our responsibility to now ensure they are implemented for the benefit of patients."

Improved Medication Use could Reduce Severe Asthma Attacks

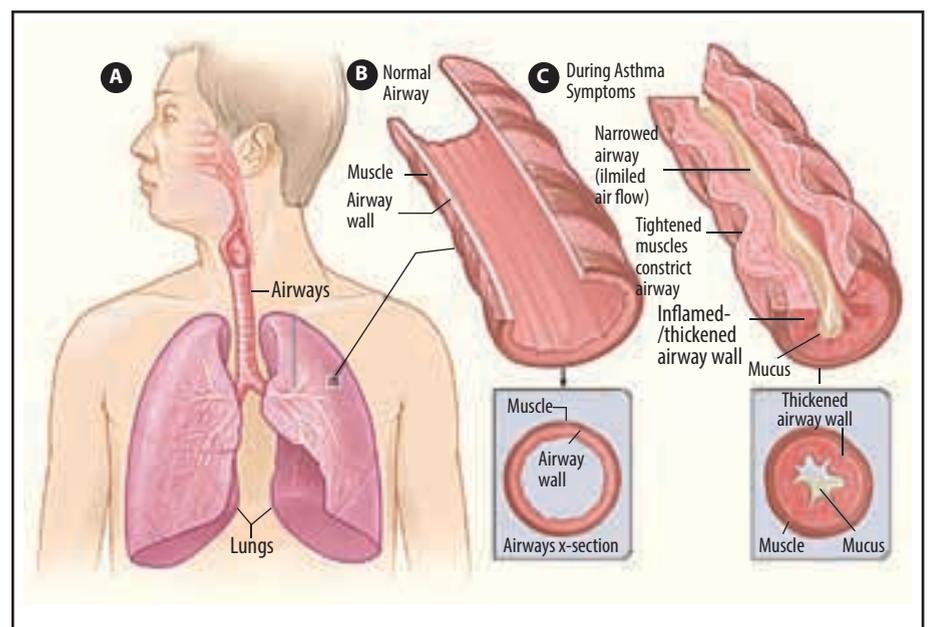
Researchers at Henry Ford Hospital have found that one-quarter of severe asthma attacks could be prevented if only patients consistently took their medication as prescribed. Moreover, an asthma attack was only significantly reduced when patients used at least 75 percent of their prescribed dose, according to the study. Patients often poorly take their medication based on the onset and degree of symptom.

Lead author Keoki Williams, M.D, MPH an Internal Medicine physician and associate director of Henry Ford's Center for Health Policy and Health Service Research said that- their findings demonstrated a relationship between medication adherence and asthma events in a manner that accounts for the changing patterns of inhaler use over time .

Inhaled corticosteroid (ICS) medication is the most effective treatment for controlling symptoms and preventing attack, which can lead to a visit to the emergency department or hospitalization or death if left untreated.

The researchers set out to measure changes in medication use over time and to estimate the effect of ICS use on asthma attacks among 298 patients. Patients were followed on average for two years and had 435 asthma attacks during that time found that, every 25 percent increase in ICS adherence was associated with an 11 percent decrease in asthma attacks.

But most importantly, they found that causal use of these medications is not enough, especially among patients whose asthma is not controlled. Patients must use their asthma controller medication as prescribed if they want to have the best chance of preventing serious asthma attacks.





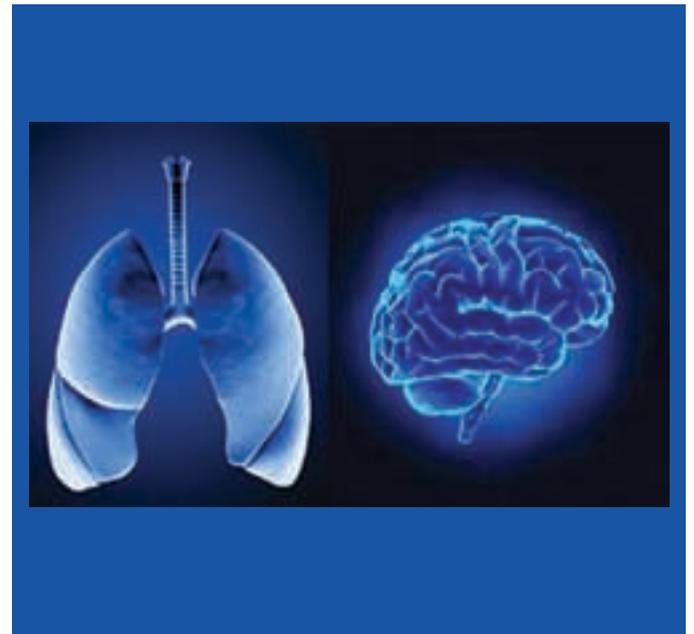
COPD may Cause Structural Changes Within the Brain

Patients with COPD demonstrate decrease in areas of the brain that process breathlessness, fear, and sensitivity to pain.

Chronic Obstructive Pulmonary Disease (COPD), a condition is often associated with disease-specific fears and avoidance of physical activity. Little is known of the structural brain processes that occur in COPD patients. A study published in the February issue of the journal *CHEST* found that patients with COPD demonstrated gray matter decreases in areas of the brain that process breathlessness, fear and sensitivity to pain.

Researchers tested 30 stable outpatients with moderate-to-severe COPD and 30 control subjects with no history of the disease. All study participants underwent an MRI compatibility check to obtain structural brain images. Patients were also tested for lung function using spirometry, and assessed with the COPD Anxiety Questionnaire (CAF). The study found patients with COPD show regionally decreased gray matter volume in the anterior, mid, and posterior cingulate cortex, hippocampus, and amygdala. Levels of degeneration in certain areas of the brain were also impacted by longer disease duration. Those individuals showed a greater fear of breathlessness and fear of physical activity, which can affect the course of the disease.

Targeting disease-specific fears in patients with COPD might not only improve outcomes of clinical interventions such as pulmonary rehabilitation, but also reverse structural brain changes in these patients, said by the researchers of Group Health Psychology, University of Leuven in Belgium.



Using Steroids Before Late Preterm Delivery Reduces Neonatal Respiratory Problems

A multicenter clinical trial led by researchers at Columbia University Medical Center (CUMC) and New York-Presbyterian has found that the use of corticosteroids in mothers at risk for late preterm delivery significantly reduced the incidence of severe respiratory complications in their babies. The study was published in *New England Journal of Medicine*.

Since the early 1990s, corticosteroids have been widely used in mothers at risk of delivering before 34 weeks of gestation. This treatment accelerates the development of the baby's lungs, so that once born, the baby is better able to clear fluid and absorb oxygen. At the time, researchers believed that corticosteroids were unnecessary for later preterm births because 99 percent of babies born after 34 to 35 weeks survive. However, it is now clear that infants born during the 'late' preterm period (between 34 and 36 weeks) have increased neonatal and childhood respiratory complications compared with newborns born at term (37 weeks or later).

The new study enrolled 2,831 pregnant women deemed at high risk of delivery during the late preterm period (34-36 weeks of gestation). The women were randomized to receive two injections of the steroid betamethasone or a placebo, given 24 hours apart.

The study found that babies whose mothers received betamethasone had a significantly lower rate of severe respiratory complications shortly after birth compared with those whose mothers were given a placebo. In particular, neonates from the treatment group had significantly lower rates of bronchopulmonary dysplasia, a



lung condition of newborns that increases the risk of chronic lung disease during childhood.

The study also found that babies in the treatment group were significantly less likely to require a long-term stay in the hospital's neonatal intensive or intermediate care unit or need respiratory treatments such as surfactant. However, Infants in the betamethasone group were more likely to have low blood sugar than those in the placebo group (24 percent vs. 14.9 percent). Therefore, the data support the monitoring of neonatal blood sugar levels when steroids are given in this situation.

Approximately 8 percent, or more than 300,000 babies, are born in the late preterm period each year. Of those, roughly 12 percent need persistent respiratory support or have other serious complications requiring prolonged stays in a special care nursery. "While survival among late preterm infants is comparable to that of babies born at term, the rate of respiratory problems and other serious complications in this group is not comparable and remains unacceptably high," said Dr. Gyamfi-Bannerman. "Expanding the use of a well-studied, safe medication to improve lung development before birth offers a means of preventing many of these complications."

Neonates with severe respiratory problems are at higher risk for long-term complications, such as chronic lung disease and neurodevelopmental problems, throughout infancy and childhood. The investigators plan to conduct further studies to determine if giving corticosteroids to mothers at risk for late preterm delivery ameliorates their children's risk of long-term health problems.

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Fiber Rich Diet may Reduce Lung Disease

A diet rich in fiber may not only protect against diabetes and heart disease, it may reduce the risk of developing lung disease, according to new research published online, ahead of print in the *Annals of the American Thoracic Society*. "Lung disease is an important public health problem, so it's important to identify modifiable risk factors for prevention," said lead author Corrine Hanson PhD, RD, an associate professor of medical nutrition at the University of Nebraska Medical Center. "However, beyond smoking very few preventative strategies have been identified. Increasing fiber intake may be a practical and effective way for people to have an impact on their risk of lung disease." Researchers reviewed records of 1,921 adults, ages 40 to 79, who participated in NHANES during 2009-2010 that administered by the Centers for Disease Control and Prevention. Fiber consumption was calculated based on the amount of fruits, vegetables, legumes and whole grains participants recalled eating. Those whose diets included more than 17.5 grams of fiber a day were in the top quartile and represented the largest number of participants, 571. Those getting less than 10.75 grams of fiber a day were in the lower group and represented the smallest number of participants, 360.



Analyzing data from the National Health and Nutrition Examination Surveys (NHANES) researchers report 68.3 percent had normal lung function, compared to 50.1 percent in the bottom quartile. 14.8 percent had airway restriction, compared to 29.8 percent in the bottom quartile. In two important breathing tests, those with the highest fiber intake also performed significantly better than those with the lowest intake. Those in the top quartile had a greater lung capacity (FVC) and could exhale more air in one second (FEV1) than those in the lowest quartile.

Researchers cited previous research that may explain the beneficial effects of fiber they observed. Other studies have shown that fiber reduces inflammation in the body, and the researchers noted that inflammation underlies many lung diseases. Other studies have also shown that fiber changes the composition of the gut microbiome, and the authors said this may in turn reduce infections and release natural lung-protective chemicals to the body. One researcher believes that public health campaigns may one day "target diet and fiber as safe and inexpensive ways of preventing lung disease."

Asthma, Allergies: Protective Factor Found in Farm Milk

Fresh, unprocessed cow's milk has a higher content of omega-3 fatty acids than does pasteurized, homogenized or low-fat milk which partly explains why children who regularly drink fresh farm milk are less likely to develop asthma than kids who consume the industrially processed product. A number of epidemiological studies have already pointed toward this effect, and it has now been verified by researchers. Moreover, this latest study shows that the protective effect is partly attributable to the fact that fresh milk contains more omega-3 fatty acids than does processed milk. Nevertheless, the researchers refrain from recommending the consumption of untreated milk, since it may contain pathogenic micro-organisms. The new findings appear in the *Journal of Allergy and Clinical Immunology*.



In collaboration with a team at Marburg University, the researchers assessed the composition of untreated farm milk, and shop milk that had undergone different degrees of industrial processing (pasteurization, homogenization, fat reduction). The results revealed that the level of omega-3 fatty acids remaining in the finished product was inversely proportional to the intensity of processing. In contrast, the content of omega-6 fatty acids, which mainly act as precursors for the production of pro-inflammatory modulators in the body, was virtually unchanged by any of the treatments used. The authors of the new study argue for the development of milder methods of milk processing that will ensure the retention of beneficial components present in raw milk, while ensuring that potentially dangerous pathogens are effectively eliminated.

The long-term research project PASTURE followed over a thousand children living in rural areas, whose mothers kept records of their child's nutrition and it's illnesses up until the age of 6. The analysis of these health diaries revealed that the proportion of children who had developed asthma by that age was significantly lower in the cohort who had regularly consumed untreated farm milk. "The effect can be partly explained by the higher overall fat content and the higher levels of omega-3 fatty acids found in farm milk," said by one of the researchers.

Large Soft Drink Intake Linked with Respiratory Problem.

Large amount of soft drink consumption is associated with asthma and/or chronic obstructive pulmonary disease (COPD), a study published in the journal *Respirology* reports.



In this study, Australian researchers examined the association between high soft drink intake and asthma and the chronic respiratory disease (COPD). They conducted telephone interviews among 16,907 participants aged 16 years and older in South Australia, inquiring about soft drink consumption. Soft drinks in the study included Coke, lemonade, flavored mineral water, Powerade, and Gatorade. Survey data showed that 1 in 10 adults drink more than half a liter of soft drink daily in South Australia. Also, the amount of soft drink consumption is associated with an increased chance of asthma and/or COPD. There is also a dose-response relationship, showing that the more soft drink consumed, the higher the risk of having these diseases. Overall, 13.3% of participants with asthma and 15.6% of those with COPD reported consuming more than half a liter of soft drink per day. The odds ratio for asthma and COPD was 1.26 and 1.79, comparing those who consumed more than half a liter of soft drink per day with those who did not consume soft drinks. In addition, smoking seems to make this association even worse, especially for COPD. Compared with those who did not smoke and consume soft drinks, current smokers who consumed more than half a liter of soft drink per day had a 6.6-fold greater risk of COPD.

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