

## INVOLUNTARY SMOKING

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HAY, DR

REVIEW: "[P]ASSIVE OR INVOLUNTARY SMOKING HAS BECOME AN ISSUE OF PUBLIC HEALTH AND POLITICAL IMPORTANCE, AND THE PURPOSE OF THIS PAPER IS TO REVIEW THE AVAILABLE EVIDENCE [FOR]...THE HYPOTHESIS THAT THE HEALTH OF NON-SMOKERS IS ADVERSELY AFFECTED BY EXPOSURE TO SMOKE-FILLED ATMOSPHERES PRODUCED BY SMOKERS." THE EFFECTS OF PASSIVE SMOKING ON THE CARDIOVASCULAR AND RESPIRATORY SYSTEMS, ON FETAL DEVELOPMENT, AND ALLERGIC AND IRRITATIVE REACTIONS ARE REVIEWED. (17 Refs.)

DISCUSSION: "INVOLUNTARY SMOKING MAY CAUSE ILL-HEALTH AND THERE IS A CASE TO BE MADE FOR MORE RESTRICTION OF SMOKING IN PUBLIC PLACES, BUT IT MUST BE SUPPORTED FOR THE RIGHT REASONS. IT IS OBVIOUS THAT THERE ARE STILL WIDE GAPS IN OUR PRESENT KNOWLEDGE AND FURTHER RESEARCH IS ESSENTIAL....

"[A] NUMBER OF STUDIES HAVE CONFIRMED THAT SIGNIFICANT RISES [IN CARBOXYHEMOGLOBIN] DO OCCUR IN NON-SMOKERS EXPOSED TO SMOKE-FILLED ATMOSPHERES.... HOWEVER, EVEN IN THESE VERY ARTIFICIAL EXPERIMENTS, THE COHb [CARBOXYHEMOGLOBIN] REMAINED FAR LOWER THAN IS REGULARLY FOUND IN SMOKERS," AND "[T]HERE IS NO EVIDENCE THAT [THESE] INCREASES OF COHb OF 1 TO 3 PERCENT HAVE ANY FUNCTIONAL SIGNIFICANCE IN HEALTHY ADULTS....

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"ASTRUP...HAS OBSERVED THAT EXPOSURE TO CO [CARBON MONOXIDE] MAY ENHANCE ATHEROGENESIS IN RABBITS RECEIVING A HIGH CHOLESTEROL DIET, AND SOME HAVE ARGUED THAT THE CO FROM PASSIVE SMOKING MAY SIMILARLY INCREASE THE RISK OF SUBSEQUENT ARTERIAL DISEASE. IT SHOULD BE STRESSED THAT

THESE EXPERIMENTS INVOLVED EXPOSURE TO HIGH CONCENTRATIONS OF CO SUFFICIENT TO INCREASE COHB TO 16-18 PERCENT OR MORE."

THE EFFECT OF CO ON MENTAL FUNCTION ALSO "HAS BEEN ADVANCED AS FURTHER EVIDENCE OF THE RISKS OF PASSIVE SMOKING.... [I]t IS VERY DOUBTFUL THAT COHB SATURATIONS OF 2-5 PERCENT HAVE ANY SIGNIFICANT EFFECT ON MENTAL FUNCTION....

"NICOTINE HAS MANY PHYSIOLOGICAL EFFECTS ON THE CARDIOVASCULAR AND CENTRAL NERVOUS SYSTEMS BUT ITS PRECISE SIGNIFICANCE IN TOBACCO-RELATED DISEASES IS STILL OPEN TO QUESTION.... WHETHER THE VERY SMALL AMOUNTS WHICH ARE ABSORBED FROM INVOLUNTARY SMOKING HAVE ANY HEALTH SIGNIFICANCE IS EVEN MORE SPECULATIVE....

"THE EFFECT OF CHRONIC EXPOSURE TO VERY LOW LEVELS OF...[BENZO(A)PYRENE] HAS NOT BEEN ESTABLISHED FOR HUMANS. NO EVIDENCE EXISTS THAT PASSIVE SMOKING CAN LEAD TO LUNG CANCER."

OXIDES OF NITROGEN, ALSO PRESENT IN "SIGNIFICANT QUANTITIES" IN TOBACCO SMOKE HAVE BEEN SHOWN TO PRODUCE EMPHYSEMA-LIKE LESIONS IN RATS. "A VARIETY OF OTHER PATHOLOGICAL CHANGES HAVE BEEN REPORTED AS A RESULT OF PASSIVE SMOKING IN EXPERIMENTAL ANIMALS, BUT AS THESE HAVE USUALLY INVOLVED EXPOSURE TO EXTREMELY HIGH LEVELS OF SMOKE, THEIR RELEVANCE TO HUMAN PATHOLOGY MAY BE QUESTIONED....

"THE FETUS IS AN IMPORTANT AND OFTEN NEGLECTED INVOLUNTARY SMOKER WHOSE DEVELOPMENT MAY BE AFFECTED BY EXPOSURE TO THE PRODUCTS OF TOBACCO CONSUMPTION. MANY STUDIES SHOW THAT MATERNAL SMOKING DURING PREGNANCY RETARDS FETAL GROWTH AND LEADS TO A LOWER BIRTH WEIGHT AND A HIGHER INCIDENCE OF STILLBIRTH AND NEONATAL DEATH. IT IS POSSIBLE THAT CARBON MONOXIDE IN THE FETAL BLOOD IS RESPONSIBLE FOR THESE DEVELOPMENTAL CHANGES."

/DSB/

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NAT HEART FDN NEW ZEAL, CHRISTCHURCH, NEW ZEALAND

REVIEW, CIGARETTE SMOKE EXPOSURE, CIGARETTE SMOKING, NONSMOKERS, CIGARETTE MAINSTREAM SMOKE COMPOSITION, CIGARETTE SIDESTREAM SMOKE COMPOSITION, PASSIVE SMOKING HEALTH HAZARDS, PASSIVE SMOKING IRRITANT EFFECTS, PASSIVE SMOKING PHYSIOLOGICAL EFFECTS, AIR CARBON MONOXIDE, CARBON MONOXIDE HEALTH HAZARDS, PASSIVE SMOKING CARDIOVASCULAR EFFECTS, AIR NICOTINE, CARBON MONOXIDE EXPOSURE, NICOTINE EXPOSURE, TOBACCO SMOKING, PASSIVE SMOKING HEMATOLOGICAL EFFECTS, CARBON MONOXIDE PSYCHOLOGICAL EFFECTS, SMOKING FETOTOXIC EFFECTS, CARBON MONOXIDE CARDIOVASCULAR EFFECTS, PASSIVE SMOKING PSYCHOLOGICAL EFFECTS/

ANTISMOKING LEGISLATION, GOVERNMENT LEGISLATION, PUBLIC PLACE SMOKING RESTRICTION, HEALTH HAZARDS PASSIVE SMOKING CAUSATION 2 HI, CIGARETTE SMOKE INHALATION DEGREE, CIGARETTE MAINSTREAM SMOKE CARBON MONOXIDE, CIGARETTE SIDESTREAM SMOKE CARBON MONOXIDE, CIGARETTE SIDESTREAM SMOKE NICOTINE, CIGARETTE SIDESTREAM SMOKE BENZO A PYRENE, CIGARETTE SMOKE TAR, CIGARETTE MAINSTREAM SMOKE NICOTINE, CIGARETTE MAINSTREAM SMOKE BENZO A PYRENE, CIGARETTE SMOKE EXPOSURE DURATION, ROOM VENTILATION, CIGARETTE SMOKE CARBON MONOXIDE, CIGAR SMOKE CARBON MONOXIDE, PIPE SMOKE CARBON MONOXIDE, CIGAR SMOKING, PIPE SMOKING, CONFINED SPACE ATMOSPHERE, NICOTINE PHYSIOLOGICAL EFFECTS, PSYCHOMOTOR PERFORMANCE DECREASE CARBON MONOXIDE CAUSATION 1, TIME SENSE DERANGEMENT CARBON MONOXIDE CAUSATION 1, SMOKING DEPENDENCE, NICOTINE DEPENDENCE, LUNG CANCER PASSIVE SMOKING CAUSATION 3, PASSIVE SMOKING HEMATOLOGICAL EFFECTS HI, BLOOD CARBON MONOXIDE SMOKING INHALATION CAUSATION 1, BLOOD CARBON MONOXIDE SMOKING CAUSATION 1, BLOOD CARBON MONOXIDE PHYSICAL ACTIVITY CAUSATION 1, VENOUS CARBON MONOXIDE, ALVEOLAR VENTILATION, ENDOGENOUS CARBON MONOXIDE, BLOOD CARBON MONOXIDE AIR POLLUTION CAUSATION 1, US NATL AIR QUALITY STANDARDS, BLOOD CARBON MONOXIDE AUTOMOBILE EXHAUST CAUSATION 1, BLOOD CARBON MONOXIDE INCREASE HI, AIR CARBON MONOXIDE DECREASE, BLOOD CARBON MONOXIDE PASSIVE SMOKING CAUSATION 1, FEDERAL AMBIENT AIR QUALITY STANDARDS, TOBACCO SMOKE NICOTINE HI,

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CORONARY ARTERY DISEASE BLOOD CARBON MONOXIDE CAUSATION 1, ANGINA PECTORIS CARBON MONOXIDE CAUSATION 2, PASSIVE SMOKING HEALTH HAZARDS HI, PASSIVE SMOKING CARDIOVASCULAR EFFECTS HI, BLOOD CARBON MONOXIDE CONTENT HI, CARBON MONOXIDE PHYSIOLOGICAL EFFECTS HI, MENTAL FUNCTION DECREASE CARBON MONOXIDE CAUSATION 2 HI, PSYCHOMOTOR PERFORMANCE DECREASE CARBON MONOXIDE CAUSATION 2 HI, MULTIPLE FACTORS INTERACTION, MENTAL FUNCTION SMOKING CAUSATION 2 HI, PSYCHOMOTOR PERFORMANCE DECREASE SMOKING CAUSATION 2 HI, CARBON MONOXIDE PSYCHOLOGICAL EFFECTS HI, PASSIVE SMOKING AMOUNT HI, BLOOD NICOTINE PASSIVE SMOKING CAUSATION 1, NICOTINE EXPOSURE HI, NICOTINE METABOLISM, BLOOD NICOTINE HI, URBAN FACTORS, TOBACCO SMOKE PARTICULATE MATTER, CIGARETTE SMOKE PARTICULATE MATTER, PASSIVE SMOKING PSYCHOLOGICAL EFFECTS HI, NICOTINE CARDIOVASCULAR EFFECTS, NICOTINE NEUROLOGICAL EFFECTS, CENTRAL NERVOUS SYSTEM EFFECTS, HEALTH HAZARDS NICOTINE CAUSATION 2 HI, BENZO A PYRENE EXPOSURE, CARCINOGENS EXPOSURE, TOBACCO SMOKE NITROGEN OXIDE, CIGARETTE SMOKE NITROGEN OXIDE, ANIMAL MODEL EXTRAPOLATION HI, PASSIVE SMOKING A HI, PEDIATRIC RESPIRATORY DISEASE PARENTAL SMOKING CAUSATION 2, RESPIRATORY DISEASE PASSIVE SMOKING CAUSATION 2, FEMALE SMOKING HABITS, CHRONIC BRONCHITIS EXACERBATIONS, CHRONIC BRONCHITIS PASSIVE SMOKING CAUSATION 2, RESPIRATORY SYMPTOMS PASSIVE SMOKING CAUSATION 2, EYE IRRITATION PASSIVE SMOKING CAUSATION 1, RESPIRATORY IRRITATION PASSIVE SMOKING CAUSATION 1, ANNOYANCE REACTION, TOBACCO SMOKE ODOR, CIGARETTE SMOKE ODOR, CARBON MONOXIDE TOXICITY, ACROLEIN TOXICITY, ALDEHYDES TOXICITY, IRRITANT EXPOSURE, TOBACCO SMOKE ACROLEIN, CIGARETTE SMOKE ACROLEIN, CIGARETTE SMOKE ALDEHYDES, TOBACCO SMOKE ALDEHYDES, TOBACCO SMOKE IRRITANT EFFECTS, RELATIVE HUMIDITY, HEMOGLOBIN METABOLISM, FETAL GROWTH DECREASE MATERNAL SMOKING CAUSATION 1, BIRTH WEIGHT DECREASE MATERNAL SMOKING CAUSATION 1, NEONATAL MORTALITY MATERNAL SMOKING CAUSATION 1, STILLBIRTH MATERNAL SMOKING CAUSATION 1, FETAL BLOOD CARBON MONOXIDE, FETAL GROWTH BLOOD CARBON MONOXIDE CAUSATION 2, PREGNANCY, PASSIVE SMOKING RESPIRATORY EFFECTS, SMOKING RESEARCH HI, NONSMOKERS RIGHTS, SMOKING ATTITUDES, LUNG CARBON MONOXIDE RETENTION,

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LUNG CIGARETTE SMOKE RETENTION, BLOOD CARBON MONOXIDE DECREASE,  
ARTERIOSCLEROSIS PASSIVE SMOKING CAUSATION 2, ARTERIOSCLEROSIS  
CARBON MONOXIDE CAUSATION 2, BLOOD CARBON MONOXIDE A HI, ARTERIOSCLEROSIS  
INDUCTION A HI, TOBACCO SMOKE EXPOSURE A HI, SMOKING RESEARCH A HI,  
RESPIRATORY INFECTION SUSCEPTIBILITY, CARBON MONOXIDE FETOTOXIC  
EFFECTS/

TOBACCO TYPE, FILTER CIGARETTES, OXYGEN TRANSPORT DECREASE, ANGINA  
PECTORIS CARBON MONOXIDE CAUSATION 1, CARBON MONOXIDE EXPOSURE A,  
RABBITS, ARTERIOSCLEROSIS PASSIVE SMOKING CAUSATION 1, ARTERIOSCLEROSIS  
BLOOD CARBON MONOXIDE CAUSATION 1, URINARY NICOTINE, BENZO A PYRENE  
CARCINOGENICITY, LUNG EMPHYSEMA INDUCTION A, LUNG LESIONS A,  
RATS, PNEUMONIA, INFECTIOUS AGENTS, HEALTH HAZARDS SMOKING CAUSATION 1,  
SMOKING HEALTH HAZARDS, SMOKING DISCONTINUATION, WORKING CONDITIONS,  
CIGARETTE SMOKE PHENOL, CIGARETTE SMOKE AMMONIA, CIGARETTE SMOKE  
CADMIUM, HIGH CHOLESTEROL DIET A, CIGARETTE EQUIVALENTS, NITROGEN  
DIOXIDE EXPOSURE A, PEDIATRIC RESPIRATORY DISEASE PARENTAL  
SMOKING CAUSATION 1, PEDIATRIC RESPIRATORY DISEASE MATERNAL SMOKING  
CAUSATION 1, FATIGUE, ALCOHOL, ALLERGY, SOCIOECONOMIC  
FACTORS/

ENGLISH LANGUAGE, CHRISTCHURCH RESIDENCE, NEW ZEALAND RESIDENCE,  
USA, WORLD HEALTH ORGANIZATION, NEW ZEALAND, PHYSICIANS OCCUPATION,  
CORONARY ARTERY DISEASE PATIENTS, CHILDREN, INFANTS, ISRAEL,  
OBSTETRICAL PATIENTS

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