UNIVERSITÀ DEGLI STUDI DI FERRARA

- EX LABORE FRUCTUS -

Corso di Laurea Magistrale a Ciclo Unico di MEDICINA E CHIRURGIA

Insegnamento di IGIENE E STATISTICA MEDICA

Modulo di LINGUA E TRADUZIONE – LINGUA INGLESE

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Calendar of lessons

12/10/2015 → What is scientific research?

23/10/2015 → How to read a scientific paper?

03/11/2015 → PubMed

06/11/2015 → Meta-analysis

Scientific research **plays a very important role in our efforts to maintain health and fighting diseases. Research helps us create new knowledge and develop proper tools for the use of existing knowledge.**

It enables health care providers to diagnose and treat diseases and also provides evidence for policies and decisions on health and development of prevention strategies.

Science is

- Public
- Objective
- Predictive
- Reproducible
- Systematic
- Cumulative

Science must be COMMUNICATED to EXIST

Publication, final step in discovery, makes this possible.

Main media of communication

Publications → **Results contribute to scientific evidence when published**

Meetings presentations & abstracts → **Only temporary value**

Why should I care?

Evidence based medicine is literature-based medicine

Why should I read?

- **To find out whether to use a (new) diagnostic test or treatment**
- **To learn clinical course and prognosis of disease or treatment**
- **To determine etiology & causation**
- **To distinguish useful from useless (or harmful) therapy**

David Sackett

Health problem

Adequate knowledge → **No research**

Importance, distribution, costs …. → **Descriptive epidemiology**

It looks at disease distribution and frequency

Causes and/or risk factors → **Analytic or etiological epidemiology**

Analyze causes, process and relationship of variables

Efficacy of preventive, curative, rehabilitative treatments …. → **Clinical or experimental epidemiology**

RCT

Efficacy of planning and organizing of Health Services → **Epidemiology applied to Health Services**

Issues for access to the results of scientific research

- Almost all scientific papers are written in English so those who want to upgrade must have a good knowledge of the language
- Articles must be found via search engines, for knowledge upgrade is therefore necessary web access and to know the basics of Internet browsing
- The main search engine is PubMed that is obviously in English
- Articles search in PubMed is not always easy and requires knowledge of the most suitable keywords
- In most cases, it allows to read only the abstract, full text of articles of interest can be purchased online or hard copy must be found in various libraries
- Many universities and research organizations provide their employees free access to many online journals

Why do reviews of the scientific literature

1. **The continuous scientific update in medicine is necessary but difficult to implement:**

- ***Scientific knowledge quickly become obsolete (already 5 years after graduation) and is universally recognized the need for continuous updates***
- ***Every year new researches are published on tens of thousands of magazines in bio-medical field***
- ***Proliferation of information on health and disease***
- ***A simple reading of original articles (primary literature) is proved to be poorly effective in changing the knowledge and attitudes of physicians***

Why do reviews of the scientific literature

2. The progress of scientific knowledge is not a quick and easy process

- ***It's always difficult to change attitudes / knowledge / behavior statements (prejudices)***
- ***The results of a single search are often not enough to change the knowledge, and serve independent confirmation (possibility of false positives)***
- ***The results of small studies may be negative only for the effect of chance, in the absence of sufficient magnitude to highlight the effect that you wanted to investigate (possibility of false negatives)***
- ***Scientific research can be affected by different types of bias, both in the method of conducting the research and in the publication of the work or the interpretation of results.***

Research

is the systematic collection, analysis and interpretation of data in order to answer a certain question or solve a problem, using a scientific approach.

Characteristics of research:

1. It demands a clear statement of the problem.
2. It requires clear objectives and a plan (it is not aimlessly looking for something in order to come across a solution).

3. It builds on existing data, using both positive and negative findings.

4. New data should be systematically collected and analyzed to answer the original research objectives.

Steps of conducting a health research

Steps of conducting a health research

1. Select a research topic
2. Review of literature and other existing information
3. Epicrisis

4. General definition of the research
5. Drafting of the protocol
6. Data collection
7. Data analysis
8. Interpretation of results

9. Presentation of results

The goal of *scientific research* is to increase the scientific knowledge on a particular topic.

The dissemination of scientific research is carried out by publication in *scientific journals*.

The value of researchers is measured by the amount of their publications and the quality of the journals in which they have been published!

A scientific experiment, no matter how complex and articulated is, will never be known and appreciated until the results have been published and understood.

The philosophy of this approach is based on the fundamental assumption that research is publishable, if it has the following requirements:

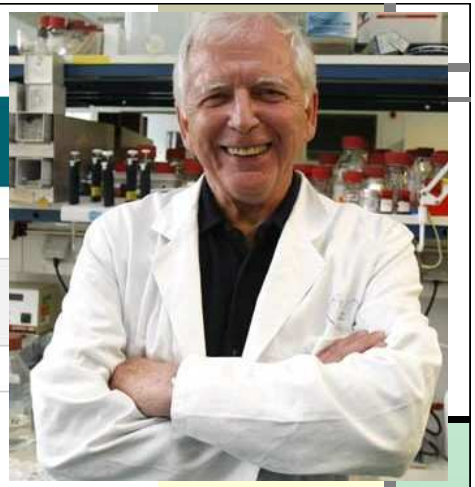
- **Originality: original ideas only increase the knowledge on a particular topic**
- **Strictness: the research should be conducted in an absolutely rigorous manner, the key word is "reproducibility", which is what makes a scientific paper different**
- **Style: A research can be based on an original idea and can be conducted according to more stringent scientific criteria, but if missing the right style, it can not be brought to community**

So in addition to doing science, you must also know how to write about your findings!

		Full Journal Title	Total Cites	Journal Impact Factor
☐	1	CA-A CANCER JOURNAL FOR CLINICIANS	18,594	115.840
☐	2	NEW ENGLAND JOURNAL OF MEDICINE	268,652	55.873
☐	3	CHEMICAL REVIEWS	137,600	46.568
☐	4	LANCET	185,361	45.217
☐	5	NATURE REVIEWS DRUG DISCOVERY	23,811	41.908
☐	6	NATURE BIOTECHNOLOGY	45,986	41.514
☐	7	NATURE	617,363	41.456
☐	8	Annual Review of Immunology	16,750	39.327
☐	9	NATURE REVIEWS MOLECULAR CELL BIOLOGY	35,928	37.806
☐	10	NATURE REVIEWS CANCER	39,868	37.400
☐	11	NATURE REVIEWS GENETICS	29,388	36.978
☐	12	NATURE MATERIALS	64,622	36.503
☐	13	JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION	126,479	35.289
☐	14	NATURE REVIEWS IMMUNOLOGY	28,938	34.985
☐	15	Nature Nanotechnology	34,387	34.048
☐	16	SCIENCE	557,558	33.611
☐	17	CHEMICAL SOCIETY REVIEWS	81,907	33.383
☐	18	Annual Review of Astronomy and Astrophysics	8,462	33.346
☐	19	Nature Photonics	23,499	32.386
☐	20	CELL	201,108	32.242
☐	21	NATURE METHODS	32,342	32.072
☐	22	NATURE REVIEWS NEUROSCIENCE	32,989	31.427
☐	23	Annual Review of Biochemistry	19,927	30.283
☐	24	REVIEWS OF MODERN PHYSICS	39,402	29.604
☐	25	NATURE GENETICS	85,481	29.352
☐	26	PROGRESS IN MATERIALS SCIENCE	8,475	27.417
☐	27	NATURE MEDICINE	62,572	27.363
☐	28	PHYSIOLOGICAL REVIEWS	24,528	27.324
☐	29	PROGRESS IN POLYMER SCIENCE	19,454	26.932
☐	30	Nature Chemistry	16,973	25.325
☐	31	LANCET ONCOLOGY	24,861	24.690

Scopus

Search | Alerts | My list



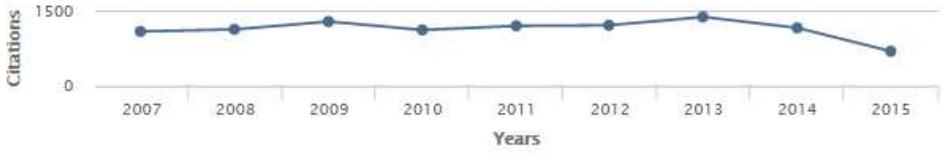
Citation overview

This is an overview of citations for this author

354 Cited Documents from **"Zur Hausen, Harald Zur"**

Author ID:7103351041 Back to author details | Save these documents to My list

Author *h*-index : 70 Scopus is in progress of updating pre-1996 cited references going back to 1970. The *h*-index might increase over time. View *h*-graph



Date range: 2007 to 2015

- Exclude self citations of selected author
- Exclude self citations of all authors
- Exclude Citations from books

Edit the data for this graph and the citation table below.

Update

Documents

Citations

Sort on: Date (newest) Citation count (descending) ...

		<2007	2007	2008	2009	2010	2011	2012	2013	2014	2015	Subtotal	>2015	Total
	Total	13564	1105	1148	1305	1135	1218	1231	1399	1178	704	10423	0	23987
1	Reprint of: Cancer "causation" by infections - Individual co...	2015										**0**		0
2	Dairy cattle serum and milk factors contributing to the risk...	2015									1	**1**		**1**
3	Cancer "causation" by infections - Individual contributions ...	2014									1	**1**		**1**
4	[Infections and oncology: viruses as a cause of colorectal c...	2014										**0**		0
5	A catalyst for change: The european cancer patient's bill of...	2014								1	2	**3**		**3**
6	Red meat consumption and cancer: Reasons to suspect involvem...	2012						2	10	4	10	**26**		**26**
7	Support for Greece	2012							1			**1**		**1**
8	Davos declaration: Allergy as a global problem (Allergy: Eur...	2012										**0**		0
9	Papillomaviruses: Evolution, Linnaean taxonomy and current n...	2011					1	2	2	3		**8**		**8**
10	Classification of papillomaviruses (PVs) based on 189 PV typ...	2010				16	74	107	149	113	74	**533**		**533**
11	2010: The time for change	2010										**0**		0
12	Obligation for cell line authentication: Appeal for concerte...	2010				1			1	1	2	**5**		**5**
13	Appropriate human papillomavirus vaccination strategies - Au...	2009										**0**		0
14	Childhood leukemias and other hematopoietic malignancies: In...	2009			2	2	3	6	5	3	4	**25**		**25**
15	The 'division of labour' model of eye evolution	2009			3	4	4	4	7	8	3	**33**		**33**

Where you publish?

Dissemination of a scientific paper takes place through *scientific journals*.

The medium for the dissemination is *scientific article*.

What is a scientific paper

- **A scientific paper is a written and published report describing original research results.**

1. ***It must be the first publication of original research results***
2. ***In a form whereby peers of the author can repeat the experiments and test the conclusions, and***
3. ***In a journal (or other source) readily available within the scientific community***

Grey literature

It is informally published written material (such as reports) that may be difficult to trace via conventional channels such as published journals and monographs because it is not published commercially or is not widely accessible. It may nonetheless be an important source of information for researchers, because it tends to be original and recent.

Examples of grey literature include:

patents, technical reports from government agencies or scientific research groups; working papers from research groups or committees; abstract of congresses, conferences and seminars (including multimedia presentations); thesis; handouts of courses and preprints.

What is Scientific Writing

- The purpose of scientific writing is to communicate new scientific findings
- Thus it has to be a clear, simple and well ordered communication
- Scientific writing must use proper English which gives the sense in the fewest short words

A major scientific publication is:

- the first opportunity to publish original data,
- in a form that anyone can repeat the experiments being able to
- test the conclusions and
- published in a journal easily accessible to the whole scientific community.

A key part of the publishing process is covered by the ***referees***, then it follows that a journal requires an anonymous peer review process which verifies the suitability for publication.

Definition of Scientific paper

- An accepted original scientific publication containing scientific information to enable peers:

1. To assess observations
2. To repeat experiments
3. To evaluate intellectual processes
4. Must have an impact
5. Available to scientific community without restriction
6. Available for regular screening by one or more of the major recognized secondary services (Index Medicus, PubMed, etc…)

An acceptable scientific paper should be the first place of disclosure that contains sufficient information to give the reader the opportunity to:

1) evaluate the observations

That means:

anyone can evaluate and draw conclusions from the data presented by the authors, regardless of the conclusions of the authors themselves.

2) repeat the experiments

That means:

according to Galileo's principle, each experiment must be repeatable and, in the same conditions will theoretically give exactly the same result.

3) evaluate the process intellectual and conceptual

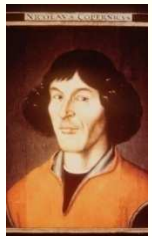
That means:

provide evidence on whether the authors' conclusions are justified by the data.

"Science" Before the Scientific Revolution

- Based almost entirely on reasoning → scientists in ancient and medieval times were really philosophers who drew conclusions based on deductive reasoning
- Experimental method or observation wasn't used at all
- Science in medieval times
  - Alchemy
  - Astrology

Rise of Universities
Contact with Muslim scientists
The Renaissance



N. Copernicus (1473–1543)

Concerning the Revolutions of the Celestial Spheres (1543)→ little initial impact outside of academic circles

Scientific Revolution

G. Galilei
(1564–1642)

- Early practitioner of the experimental method
- Mathematical formula for acceleration of falling objects
- Telescopes and astronomical discoveries

Galileo's scientific observations proving that the Earth wasn't at the center of the universe had vast religious implications→ referred to the Roman Inquisition for heresy

His main contribution was the construction of a method that would allow to come to irrefutable conclusions through experimental observations. He started (with the telescope) the use of measuring instruments and (with the inclined plane) of experiments in the laboratory. He also introduced for the first time in the history the idea that nature was "written in mathematical language".

Scientific Method

1. Choose a question to investigate
2. Identify a hypothesis related to the question
3. Make testable predictions in the hypothesis
4. Design an experiment to answer hypothesis question
5. Collect data in experiment
6. Determine results and assess their validity
7. Determine if results support or refute your hypothesis

Chance
Bias
Confounding

If the experiments prove the hypothesis to be true, it becomes a theory or law of nature.

If the experiments prove the hypothesis to be false, the hypothesis must be rejected or modified.

From the results of your study, does a statistical relationship exist between two or more events, characteristics, or other variables?

Is there a statistical association, between exposure and disease/outcome?

The degree to which the rate of disease or outcome in persons with a specific exposure is either higher or lower than the rate of disease or outcome among those without that exposure.

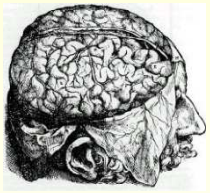
- **H_0: There is no association between the exposure and disease of interest**
- **H_1: There is an association between the exposure and disease of interest beyond what might be expected from random error alone**

Scientific Revolution in Medicine

Andrea Vesalio
(1514–1564)

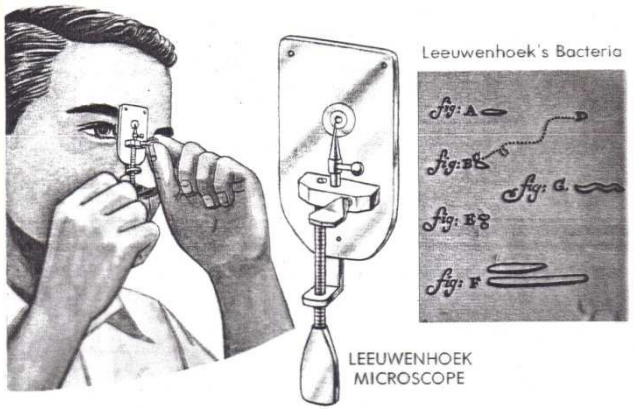
In 1543 Vesalius published *On the Structure of the Human Body* → the first accurate and detailed book on human anatomy.

Medieval human anatomy drawing



Drawings done by Vesalius

In late 1600s van Leeuwenhoek perfected the microscope and became the first human to see cells and microorganisms.



A. van Leeuwenhoek
(1632–1723)

Origins of Scientific Writing

Knowledge is lost without written records

Cave paintings

Papyrus paper

In 105 AD, the Chinese invented paper

Knowledge could not be widely circulated with no effective duplication

Biblia Latina, Modena

In 1455 AD, Gutenberg printed his 42-line Bible from movable type on a printing press

“Le journal des sçavans” (Journal of Learned Men) → the first scientific journal (published in France)

The first weekly issue was published on January 4, 1665.

In Germany, first scientific journals were written in Latin.

1670 → National Academy of Sciences founded his own official journal “Miscellanea Curiosa”, one of the oldest scientific journals and the first in the world to be specifically dedicated to medicine.

Scientific Writing is based on IMRAD format that corresponds to:

- **I = *Introduction*, what question (problem) was studied**
- **M = *Methods*, how was the problem studied**
- **R = *Results*, what are the findings**
- **A = *and***
- **D = *Discussion*, what do these findings mean**

Literature review

Why is it important to review already available information when preparing for a research?

- **It prevents you from duplicating work that has been done before.**
- **It helps you to find out what others have learned and reported on the problem you want to study. This may assist you in refining your statement of the problem.**
- **It helps you to become more familiar with the various research methods that might be used in your study.**
- **It should provide you with convincing arguments for why your particular research project is needed.**

Bibliographic research

It is a process that allows the systematic (so not random) collection, sorting and cataloging of what has been written and documented on a specific topic.

Primary source **: work written by the person (author) who developed the theory or conducted research**

Secondary source or critical reading **: work written by different people who have not participated in the primary job**

THE EVIDENCE PYRAMID

Guidelines are clinical behavior recommendations arising from primary and secondary studies, they are derived from a process of systematic review of literature and the opinions of experts and are designed to help the clinicians in the performance of their actions and decision-making.

In vitro research

Information begins at the bottom of the pyramid. This is where ideas and laboratory research take place. The first step requires tests with lab models.

Cancer Res. 1975 Sep;35(9):2461-8.

Metabolism of cigarette smoke condensates by human and rat homogenates to form mutagens detectable by Salmonella typhimurium TA1538.

Hutton JJ, Hackney C.

Abstract

Nineteen fractions of whole condensate of smoke from the University of Kentucky Reference Cigarette IRI were tested for mutagenicity in vitro using a bacterial indicator system. As little as 25 mug of the active fractions were mutagenic toward histidine-requiring Salmonella typhimurium TA1538, if the condensates were incubated in the presence of rat or human liver homogenates of lung were relatively inactive. Homogenates from livers of rats that had been treated with 3-methylcholanthrene converted condensates to mutagens more efficiently than did liver homogenates from man or from normal or phenobarbital-treated rats. Use of homogenates from animals treated with 3-methylcholanthrene gave much more reproducible results in smoke fraction assays because larger numbers of revertants were obtained, and dose-response curves were linear over the range 25 to 250 mug condensate. The linear dose-response curves permitted quantitative comparison of the various fractions. The mutagenicity per mg of basic fractions of whole smoke condensate is very high and that of neutral polycyclic hydrocarbons is very low. Because of the exquisite preferential sensitivity of the TA1538 test system to polycyclic amines and insensitively to alkyl polycyclics, there is a poor quantitative correlation between mutagenicity and carcinogenicity, as measured by skin painting or in vitro cell transformation. There is substantial evidence that many carcinogens are mutagens but that most of these compounds require metabolism before they are biologically active. If further development improves the sensitivity of the bacterial testing system to mutagenic derivatives of alkyl polycyclic and heteropolycyclic hydrocarbons, it may provide a convenient, rapid, quantitative, and inexpensive bioassay for the detection of potentially carcinogenic substances in tobacco smoke condensates.

PMID: 1097108 [PubMed - indexed for MEDLINE] Free full text

Animal Research

Ideas turn into therapies and diagnostic tools, which are tested with animals.

Br J Cancer. 1971 Jun;25(2):291-7.

A comparative study on aflatoxin B 1 metabolism in mice and rats.

Steyn M, Pitout MJ, Purchase IF.

Abstract

In vivo metabolic studies on rats and mice revealed a marked difference in the fluorescent compounds produced after ingestion of aflatoxin B(1). The mouse converted aflatoxin B(1) to three unknown fluorescent compounds, designated x(1), x(2) and x(3) and the known aflatoxin M(1), while the rat was only capable of producing aflatoxin M(1). The results suggested that metabolites x(1), x(2), x(3) and aflatoxin M(1) were not part of a major metabolic pathway, but produced independently. These unknown yellowish-green fluorescent compounds did not seem to be conjugated with sulphate or glucuronic acid.In vitro incubations of various mouse liver cell fractions with aflatoxin B(1) showed that metabolites x(1), x(2), x(3) and aflatoxin M(1), could only be produced by the microsomal fraction and that NADPH was needed as a co-factor. The differences in aflatoxin metabolism by mice and rats are discussed in relation to the apparent resistance of the mouse to the carcinogenic effects of this toxin.

PMID: 4398926 [PubMed - indexed for MEDLINE] PMCID: PMC2008446 Free PMC Article

Case Report

A detailed report of the diagnosis, treatment, and follow-up of an individual patient. Case reports also contain some demographic information about the patient (for example, age, gender, ethnic origin).

Diagn Pathol. 2013 Jun 6;8:91. doi: 10.1186/1746-1596-8-91.

Isolated hypoplastic circumflex coronary artery: a rare cause of haemorrhagic myocardial infarction in a young athlete.

Riede FN[1], Bulla S, Grundmann S, Werner M, Riede UN, Otto C.

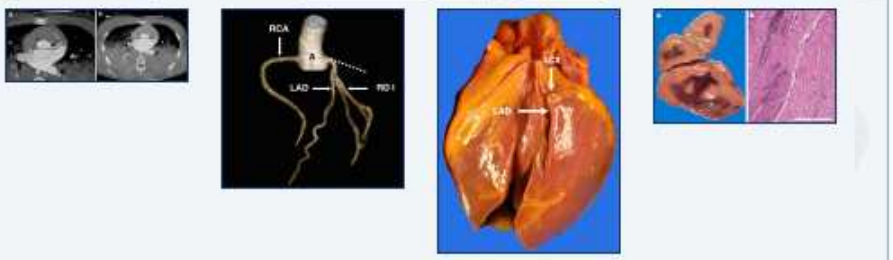
Author information

Abstract

Hypoplastic coronary artery disease is a rare condition that may lead to myocardial infarction and sudden death. Here we describe for the first time an isolated hypoplasia of the left circumflex artery (LCX). An otherwise healthy and athletically active 16-year-old boy was admitted to the intensive care unit (ICU) after out-of-hospital cardiac arrest. He died 12 hours after the initial event. Autopsy revealed an isolated hypoplastic LCX and acute haemorrhagic infarction in the posterolateral myocardium. The existence of isolated hypoplasia of the LCX challenges our understanding of coronary artery development. Virtual slides: The virtual slide(s) for this article can be found here: http://www.diagnosticpathology.diagnomx.eu/vs/1558483061962648.

PMID: 23742172 [PubMed - indexed for MEDLINE] PMCID: PMC3682927 Free PMC Article

Images from this publication. See all images (4) Free text



Case-Control Studies

A study that compares two groups of people: those with the disease or condition under study (cases) and a very similar group of people who do not have the disease or condition (controls). Researchers study the medical and lifestyle histories of the people in each group to learn what factors may be associated with the disease or condition. For example, one group may have been exposed to a particular substance that the other was not. Also called a retrospective study.

J Phys Act Health. 2015 Sep 17. [Epub ahead of print]

Physical Activity and Lung Cancer: A Case-Control Study in Brazil.

Brizio M LR[1], Hallal PC, Lee IM, Domingues MR.

⊕ Author information

Time

Abstract

BACKGROUND: The aim of this study was to investigate the association between lifetime physical activity and risk of lung cancer.

METHODS: A case-control study was conducted in southern Brazil. Cases were recruited from oncology services of four hospitals. Controls were selected from the same hospitals, but from different services (traumatology and emergency). Both cases (n=81) and controls (n=168) were interviewed using a questionnaire about sociodemographic characteristics, anthropometric information and family history of cancer. Controls were matched to cases according to sex and age (± 5 years). Detailed information on smoking was collected. Physical activity was measured using the Lifetime Physical Activity Questionnaire.

RESULTS: 89% of the cases were either current or former smokers; among controls this proportion was 57%. Participants in the second, third and fourth quartiles of all-domains physical activity had odds ratios of 0.54 (95%CI 0.21; 1.40), 0.25 (95%CI 0.07; 0.83) and 0.24 (95%CI 0.07; 0.83) for lung cancer, compared with the lowest quartile, after adjusting for confounding. Leisure-time physical activity was not associated with lung cancer risk in fully adjusted models.

CONCLUSION: Lifetime all-domains physical activity may reduce the risk of lung cancer.

PMID: 26382924 [PubMed - as supplied by publisher]

Cohort Studies

A research study that compares a particular outcome (such as lung cancer) in groups of individuals who are alike in many ways but differ by a certain characteristic (for example, female nurses who smoke compared with those who do not smoke).

Br Med J. 1980 Apr 5;280(6219):967-71.

Mortality in relation to smoking: 22 years' observations on female British doctors.

Doll R, Gray R, Hafner B, Peto R.

Abstract

A total of 6194 female doctors who in 1951 replied to a questionnaire about their smoking habits were followed up prospectively for 22 years. During that time 1094 died. Ischaemic heart disease, lung cancer, and chronic obstructive lung disease were all significantly ($p < 0.001$) related to smoking, though the absolute excess risks were lower than in male doctors smoking equivalent amounts. Female smokers born before the first world war were less likely to describe themselves as inhalers or as having started to smoke while young than were female smokers who were born later. In these respects this younger group resembled male smokers, and as they move into their 60s and 70s their absolute risk of lung disease and relative risk of ischaemic heart disease will probably come to resemble the risks for men smoking the same numbers of cigarettes. These findings show only that cigarette smoking causes lung cancer, chronic obstructive lung disease, and heart disease in women as in men. Whether the proportional increase in mortality from these diseases is as great in women as in men might be estimated directly from new case-control studies on men and women born since 1920.

PMID: 7417764 [PubMed - indexed for MEDLINE] PMCID: PMC1601142 Free PMC Article

Randomized Clinical Trials

A study in which the participants are assigned by chance to separate groups that compare different treatments; neither the researchers nor the participants can choose which group.

Using chance to assign people to groups means that the groups will be similar and that the treatments they receive can be compared objectively.

At the time of the trial, it is not known which treatment is best. *It is the patient's choice to be in a randomized trial.*

Randomized Clinical Trials

Pediatrics. 2015 Apr;135(4):649-57. doi: 10.1542/peds.2014-1880.

Motivational interviewing and dietary counseling for obesity in primary care: an RCT.

Resnicow K[1], McMaster F[2], Bocian A[3], Harris D[3], Zhou Y[2], Snetselaar L[4], Schwartz R[5], Myers E[6], Gotlieb J[3], Foster J[6], Hollinger D[4], Smith K[4], Woolford S[7], Mueller D[4], Wasserman RC[8].

⊕ Author information

Abstract

BACKGROUND AND OBJECTIVE: Few studies have tested the impact of motivational interviewing (MI) delivered by primary care providers on pediatric obesity. This study tested the efficacy of MI delivered by providers and registered dietitians (RDs) to parents of overweight children aged 2 through 8.

METHODS: Forty-two practices from the Pediatric Research in Office Settings Network of the American Academy of Pediatrics were randomly assigned to 1 of 3 groups. Group 1 (usual care) measured BMI percentile at baseline and 1- and 2-year follow-up. Group 2 (provider only) delivered 4 MI counseling sessions to parents of the index child over 2 years. Group 3 (provider + RD) delivered 4 provider MI sessions plus 6 MI sessions from a RD. The primary outcome was child BMI percentile at 2-year follow up.

RESULTS: At 2-year follow-up, the adjusted BMI percentile was 90.3, 88.1, and 87.1 for groups 1, 2, and 3, respectively. The group 3 mean was significantly (P = .02) lower than group 1. Mean changes from baseline in BMI percentile were 1.8, 3.8, and 4.9 across groups 1, 2, and 3.

CONCLUSIONS: MI delivered by providers and RDs (group 3) resulted in statistically significant reductions in BMI percentile. Research is needed to determine the clinical significance and persistence of the BMI effects observed. How the intervention can be brought to scale (in particular, how to train physicians to use MI effectively and how best to train RDs and integrate them into primary care settings) also merits future research.

KEYWORDS: obesity

Comment in

Primary care interventions for pediatric obesity: need for an integrated approach. [Pediatrics. 2015]

Systematic Reviews

A summary of the medical literature that uses explicit methods to perform a thorough literature search and critical appraisal of individual studies. Systematic reviews are not all equal, and quality issues are important.

Int J Womens Health. 2015 Apr 21;7:415-27. doi: 10.2147/IJWH.S54599. eCollection 2015.

Smoking cessation in pregnancy: psychosocial interventions and patient-focused perspectives.

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Abstract

BACKGROUND: Smoking during pregnancy causes obstetric and fetal complications, and smoking cessation may have great benefits for the mother and the child. However, some pregnant women continue smoking even in pregnancy.

OBJECTIVE: To review the literature addressing the prevalence of smoking during pregnancy, explore psychosocial factors associated with smoking, and review the evidence of psychosocial interventions for smoking cessation during pregnancy in recent years.

LITERATURE REVIEW: Computerized Internet search results in PubMed for the years spanning from 2004 to 2014, as well as references cited in articles, were reviewed. A search for the keywords "smoking cessation pregnancy" and "intervention" and "clinical trials" yielded 52 citations. Thirty-five citations were identified as useful to this review for the evidence of psychosocial interventions for smoking cessation during pregnancy.

RESULTS: The prevalence of smoking during pregnancy differs by country, reflecting the countries' social, cultural, and ethnic backgrounds. Women who had socioeconomic disadvantages, problems in their interpersonal relationships, higher stress, depression, less social support, and who engaged in health-risk behaviors were more prone to smoking during pregnancy. Psychosocial interventions, such as counseling, are effective methods for increasing smoking cessation.

CONCLUSION: Smokers may have various psychosocial problems in addition to health problems. It is important to understand each individual's social situation or psychosocial characteristics, and a psychosocial intervention focused on the characteristics of the individual is required.

KEYWORDS: pregnancy; psychosocial intervention; smoking cessation; women's health

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Meta-Analysis

Systematic methods that use statistical techniques for combining results from different studies to obtain a quantitative estimate of the overall effect of a particular intervention or variable on a defined outcome. This combination may produce a stronger conclusion than can be provided by any individual study.

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Modifiable predictors of dementia in mild cognitive impairment: a systematic review and meta-analysis.

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Abstract

OBJECTIVE: Public health campaigns encouraging early help seeking have increased rates of mild cognitive impairment (MCI) diagnosis in Western countries, but we know little about how to treat or predict dementia outcomes in persons with the condition.

METHOD: The authors searched electronic databases and references for longitudinal studies reporting potentially modifiable risk factors for incident dementia after MCI. Two authors independently evaluated study quality using a checklist. Meta-analyses were conducted of three or more studies.

RESULTS: There were 76 eligible articles. Diabetes and prediabetes increased risk of conversion from amnestic MCI to Alzheimer's dementia; risk in treated versus untreated diabetes was lower in one study. Diabetes was also associated with increased risk of conversion from any-type or nonamnestic MCI to all-cause dementia. Metabolic syndrome and prediabetes predicted all-cause dementia in people with amnestic and any-type MCI, respectively. Mediterranean diet decreased the risk of conversion to Alzheimer's dementia. The presence of neuropsychiatric symptoms or lower serum folate levels predicted conversion from any-type MCI to all-cause dementia, but less formal education did not. Depressive symptoms predicted conversion from any-type MCI to all-cause dementia in epidemiological but not clinical studies.

CONCLUSIONS: Diabetes increased the risk of conversion to dementia. Other prognostic factors that are potentially manageable are prediabetes and the metabolic syndrome, neuropsychiatric symptoms, and low dietary folate. Dietary interventions and interventions to reduce neuropsychiatric symptoms, including depression, that increase risk of conversion to dementia may decrease new incidence of dementia.

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Finding without seeking is difficult and rare, but if one tries, it is frequent and easy. However, if one does not know how to search, the discovery is impossible.

(Archita di Taranto,
Greek mathematician and philosopher,
Taranto 428-347 b.C.)