

## Wikiversity Journal of Medicine

## Wikiversity Journal of Medicine is

- An open access journal with no publication cost for authors.
- Started in 2014
- Currently located in Wikiversity
- Attracts referenced texts and images by means of scientific publishing, which can then be used across Wikimedia projects.
- Also accepts articles that are notable in their own right.

## Wikipedia

- An encyclopedia that anyone can edit.
- 50% to 70% of physicians use Wikipedia as a source for health care information.

Heilman JM, West AG. Wikipedia and Medicine: Quantifying Readership, Editors, and the Significance of Natural Language. J Med Internet Res 2015;17(3):e62. PMID: 25739399

 Similar rate of errors compared to Encyclopædia Britannica.

Giles, J. (2005). "Internet encyclopaedias go head to head". Nature 438 (7070): 900-1.Bibcode: 2005Natur. 438.900G. doi: 10.1038/438900a. PMID 16355180

## Wikipedia issues

Biggest issue is lack of information.

Clauson, K. A; Polen, H. H; Boulos, M. N K.; Dzenowagis, J. H (18 November 2008). "Scope, Completeness, and Accuracy of Drug Information in Wikipedia". *Annals of Pharmacotherapy* **42** (12): 1814–1821. doi:10.1345/aph.1L474. PMID 19017825.

Researchers usually want credit for their work.

- More than a mention in the "history" tab.

- Particularly a shortage of images.
  - Can not simply use any image on the Internet due to copyright.

## Medical imaging

- Text and diagrams can be created with own words and designs
- X-rays and other graphics from medical imaging *must* be copies from the original sources (very few),
- or be user uploads (little prospects of peer review)



#### Images of Aerococcus urinae

Image credits and author of introduction: Mikael Häggström, MD, Sundsvall Regional Hospital, email

Author of patient case: Jonatan Mattila, MD, Sundsvall Regional Hospital, email

Wiver J Med. 2015; 2 (1). doi: 10.15347/wjm/2014.013

#### 1 Abstract

# Example: A submitted article containing images.

1989 and designated as a separate species in 1992.<sup>[11]</sup> It can cause urinary tract infections, bacteremia/septicemia and/or endocarditis.<sup>[2]</sup> As a urinary tract pathogen, it causes infections predominantly in elderly persons with local or general predisposing conditions.<sup>[3]</sup> Aerococcus urinae has been estimated to cause approximately 0.31 - 0.44% of urinary tract infections.<sup>[3]</sup>

#### 3 Patient case

A 73 year old man presented to the emergency department with two days of fatigue, fever and chills. He had a previous history of left arterial cerebral media infarction with expressive aphasia, right side hemiparesis and poststroke seizures. He suffered from hypertension, atrial fibrillation and aortic stenosis with normal systolic left ventricular function as well as urinary incontinence and prostatic hyperplasia.

In the emergency department he was afebrile and the blood-samples showed a C-reactive protein level of 19 mg/l (normally less than 5<sup>[4]</sup> or 6<sup>[5]</sup>) and a leukocyte count of 13.7\*10<sup>6</sup>/l (normally less than 9.0<sup>[6]</sup> or 10.0<sup>[7]</sup>). The patient was admitted to the hospital for observation, and after one day on the ward he developed chills and was subfebrile with a tympanic body temperature of 37.6°C (normally up to 37.5°C)<sup>[8]</sup>. Blood and urine samples were taken for culture. Microscopy of the blood samples showed gram-positive cocci. The patient received intravenous cefotaxime. After three days all blood samples and urine samples showed growth of gram-positive catalase-negative cocci. Aerococcus urinae (Images 1 and 2).

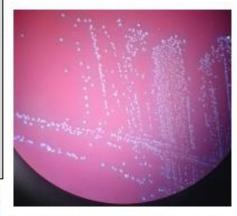


Image 1: Blood agar with alpha hemolytic colonies following culture from the patient's blood samples.

Confirmation was done with MALDI TOF mass spectrometry.

During the seven days of inpatient care, inflammatory parameters did not reach more than 61 mg/l for C-reactive protein and 13.7\*10°/l for leukocyte count. The patient received a cardiac ultrasound due to a systolic murmur, but it did not show any convincing signs of endocarditis.

Written consent was obtained from the patient for this publication.



Image 2: Micrograph of the bacteria with Gram stain, showing gram-positive cocci.

#### 4 References

- de Jong, M. F. C. (2010). "Aerococcus urinae: Severe and Fatal Bloodstream Infections and Endocarditis". Journal of Clinical Microbiology 48 (9): 3445–3447. doi:10.1128/JCM.00835-10. ISSN 0095-1137.
- [2] Skov, R. (2001). "In vitro antimicrobial susceptibility of Aerococcus urinae to 14 antibiotics, and time-kill curves for penicillin, gentamicin and vancomycin". Journal of Antimicrobial Chemotherapy 48 (5): 653–658. doi:10.1093/jac/48.5.653. ISSN 14602091.
- [3] Schuur PM, Kasteren ME, Sabbe L, Vos MC, Janssens MM, Buiting AG (1997). "Urinary tract infections with Aerococcus urinae in the south of The Netherlands". Eur. J. Clin. Microbiol. Infect. Dis. 16 (12): 871–5. PMID 2005666.
- [4] "C-reactive protein". GPnotebook. Retrieved 2015-03-07
- [5] 2730 Serum C-Reactive Protein values in Diabetics with Periodontal Disease A.R. Choudhury, and S. Rahman, Birdem, Diabetic Association of Bangladesh, Dhaka, Bangladesh. (the diabetics were not used to determine the reference ranges)
- [6] Reference range list from Uppsala University Hospital ("Laborationslista"). Artnr 40284 Sj74a. Issued on April 22, 2008
- [7] lymphomation.org > Tests & Imaging > Labs > Complete Blood Count Retrieved on May 14, 2009
- [8] Tympanic temperature for men, according to: Sund-Levander M, Forsberg C, Wahren LK (2002). "Normal oral, rectal, tympanic and axillary body temperature in adult men and women: a systematic literature review". Scand J Caring Sci 16 (2): 122–8. PMID 12000664.



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#### Aerococcus urinae

From Wikipedia, the free encyclopedia

Aerococcus urinae is a member of the bacterial genus Aerococcus. The bacterium is a Gram-positive, catalase-negative coccus growing in clusters. Isolates of this species were originally isolated from the urine of patients with urinary tract infections and were denoted Aerococcus-like organisms.[1] In 1992, A. urinae was assigned as distinct species.[2] Due to

Images are stored in Wikimedia Commons, and can be used across sister projects.

microbiological kely been underestimated ic methods.[3] A. urinae tive endocarditis.

[[5] A. urinae is sensitive to ns, and vancomycin. d in urinary tract acin.[6] The bacterium can telets, two features of nism.[7] A. urinae is the ns whereas Aerococcus

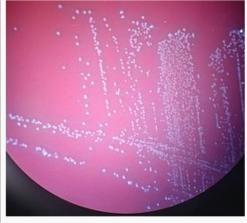
rococcus-like organism, a Clinical Microbiology 29 (5):

alysis of some Aerococcusccus urinae sp. nov.". Journal

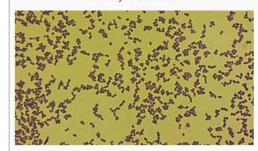
of General Microbiology 138 (2): 401-405. doi:10.1099/00221287-138-2-401 &

- 3. A Rasmussen, M (December 2012). "Aerococci and aerococcal infections.". Journal of Infection 66 (6): 467–74. doi:10.1016/j.jinf.2012.12.006 ₽. PMID 23277106 ₽.
- 4. ^ Ebnöther, C; Altwegg, M; Gottschalk, J; Seebach, JD; Kronenberg, A (Oct 2002). "Aerococcus urinae endocarditis: case report and review of the literature.". Infection 30 (5): 310-3. doi:10.1007/s15010-002-3106-x ₽. PMID 12382093 ₽.

#### Aerococcus urinae



Aerococcus urinae on blood agar, showing alpha hemolytic colonies.



Microscopy of Aerococcus urinae with gram stain, showing gram positive cocci.

#### Scientific classification

Kingdom: Bacteria

Phylum: Firmicutes

Class: Bacilli

#### Insights into abdominal pregnancy

## Example:

## A review article, based on reliable sources:

#### Gwinyai Masukume

Division of Epidemiology and Biostatistics, School of Public Health, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa

Wiver J Med. 2014; 1 (2). doi: 10.15347/wjm/2014.012

#### Editor's note

This article provided a great deal of valuable evidence that was not mentioned in the Wikipedia article on abdominal pregnancy, and the Wikipedia article has subsequently been expanded with text from this publication. However, because of this purpose, it has never been the aim of this article in itself to be a complete review of the subject, and many aspects of abdominal pregnancy are not included herein.

This article also provides an example of how to contribute to Wikimedia projects such as Wikipedia by means of academic publishing.

Mikael Häggström, 2 December 2014

#### 1 Introduction

While rare, abdominal pregnancies have a higher chance of maternal mortality, perinatal mortality and morbidity compared to normal and ectopic pregnancies, but on occasion a healthy viable infant can be delivered.

Because tubal, ovarian and broad ligament pregnancies are as difficult to diagnose and treat as abdominal pregnancies, their exclusion from the most common definition of abdominal pregnancy has been debated.<sup>[2]</sup>

Others - in the minority - are of the view that abdominal pregnancy should be defined by a placenta implanted into the peritoneum. [3]

#### 2 Symptoms and signs

Abdominal pregnancy does not have any specific symptoms and signs so much so that in about half of instances it is missed, only being discovered during surgery; because of the "vague" yet serious nature of the symptoms, signs and results of medical tests patients with abdominal pregnancy will generally have surgery at some point. [4] [5] [6]

#### 3 Risk factors

Risk factors are similar to tubal pregnancy with sexually transmitted disease playing a major role. [7]; however about half of those with ectopic pregnancy have no known risk factors - known risk factors include damage to the Fallopian tubes from previous surgery or from previous ectopic pregnancy and tobacco smoking. [8]

#### 4 Mechanism

Typically an abdominal pregnancy is a secondary implantation which means that it originated from a tubal (less common an ovarian) pregnancy and reimplanted. [9][mote 1] Other mechanisms for secondary abdominal pregnancy include uterine rupture, rupture of a uterine rudimentary horn and fimbrial abortion. [1]

#### 5 Diagnosis



A 23 week abdominal pregnancy on ultrasound showing a normal fetus and amniotic fluid.

Image by Dahab AA, Aburass R, Shawkat W, Babgi R, Essa O, Muiallid RH.

Suspicion of an abdominal pregnancy is raised when the baby's parts can be easily felt, or the lie is abnormal, the cervix is displaced, or there is failed induction of labor. [4] X-rays can be used to aid diagnosis. [9]

To diagnose the rare primary abdominal pregnancy, Studdiford's 1942 criteria need to be fulfilled: tubes and ovaries should be normal, there is no abnormal connection (fistula) between the uterus and the abdominal

1

## The text is used to expand Wikipedia articles: Before After

Suspicion of an abdominal pregnancy is raised when the baby's parts can be easily felt, or the [[Lie (obstetrics)|lie]] is abnormal. [[Obstetrical ultrasonography|Sonography]] is extremely helpful in the diagnosis as it can demonstrate that the pregnancy is outside an empty uterus, there is no [[amniotic fluid]] between the placenta and the fetus, no uterine wall surrounding the fetus, fetal parts are close to the abdominal wall, and the fetus is in abnormal lie.<ref name=hk/> [[MRI]] has also been used with success to diagnose abdominal pregnancy.<ref name=dahiya/> Elevated [[alpha-fetoprotein]] levels are another clue of the presence of an abdominal pregnancy.<ref>{{cite journal | author=Tromans PM, Coulson R, Lobb MO, Abdulla U Ititle= Abdominal pregnancy associated with extremely elevated serum alphafetoprotein: case report |journal= British Journal of Obstetrics and Gynaecology pmid=6200135 | year=1984 | volume=91 | issue=3 | pages=296-8 | doi=10.1111/j.1471-0528.1984.tb04773.x}}</ref>

parts can be easily felt, or the [[Lie (obstetrics)|lie]] is abnormal, the [[Cervix|cervix]] is displaced, or there is failed [[Labor induction[induction of labor]]. <ref name=Nunyalulendho/> [[X-ray#Medical uses|X-rays]] can be used to aid diagnosis. <ref name=bonn/> Sonography can demonstrate that the pregnancy is outside an empty uterus, there is reduced to no [[amniotic fluid]] between the placenta and the fetus, no uterine wall surrounding the fetus, fetal parts are close to the abdominal wall, the fetus has an abnormal lie, the placenta looks abnormal and there is [[Ascites|free fluid in the abdomen]]. <ref name=hk/> <ref>{{cite doi|10.1186/1752-1947-7-10}}</ref> [[MRI]] has also been used with success to diagnose abdominal pregnancy and plan for surgery. <ref>{{cite journal | author=Lockhat F, Corr P, Ramphal S, Moodly J |title=The value of magnetic resonance imaging in the diagnosis and management of extra-uterine abdominal pregnancy |journal= Clin Radiol |pmid=16488208 | year=2006 | volume=61 | issue=3 | pages=264-9 | doi=}}</ref><ref name=dahiya/> Elevated [[alpha-fetoprotein]] levels are another clue of the presence of an abdominal pregnancy.<ref>{{cite journal | author=Tromans PM, Coulson R, Lobb MO, Abdulla U Ititle= Abdominal pregnancy associated with extremely elevated serum alphafetoprotein: case report |journal = British Journal of Obstetrics and Gynaecology |pmid=6200135 | year=1984 | volume=91 | issue=3 | pages=296-8 | doi=10.1111/j.1471-0528.1984.tb04773.x}}</ref>

Suspicion of an abdominal pregnancy is raised when the baby's

## Benefit to authors

Vast readership of published content.

Wikipedia is the 7th most visited webpage on the Internet.

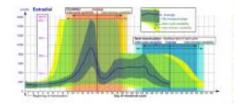
"How popular is wikipedia.org?". Alexa Internet. ^ Alexa Top 500 Global Sites".alexa.com.

#### Reference ranges for estradiol, progesterone, luteinizing hormone and follicle-stimulating hormone during the menstrual cycle

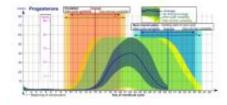
Mikael Häggström Sundsvall Regional Hospital, Sweden

Wiver J Med. 2014; 1 (1). doi: 10.15347/wjm/2014.001

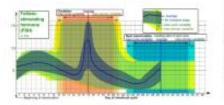
This is a description for a series of diagrams showing the reference ranges for the blood content of the hormones estradiol (the main estrogen), progesterone, follicle-stimulating hormone and luteinizing hormone during the menstrual cycle, as established on a reference group in Switzerland using the Abbott ARCHITECT analyzer.



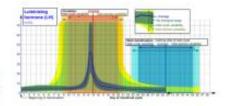
Estradiol during menstrual cycle.png



Progesterone during menstrual cycle.png



Follice-stimulating hormone (FSH) during menstrual cycle.png



Luteinizing hormone (LH) during menstrual cycle.png

#### 1 Interpretation

The time scale starts with the beginning (or "onset") of (last) menstrual period (LMP), given as day number. Day number 1 corresponds to 0 to 0.99 days from the beginning of the LMP, and Day number 2 corresponds to 1.00 to 1.99 days from the beginning of the LMP and so forth. The time scale ends at whatever is the actual next menstruation, which marks the beginning of the next cycle, which is equivalent to starting all over again from the beginning of the time scale.

- Inter-cycle (also called within-woman or intrawoman) variability for ovulation and next menstruation are the 95% prediction intervals for the timing of these events in any single woman, assuming an inter-cycle average duration that is equal to population average.
- Inter-woman variability for ovulation and next menstruation are the 95% prediction intervals for the timing of these events in the overall population.

Hormone levels represent usual ones, not necessarily related to what is healthy. Hormone ranges vary between cases at the same biological stage of the menstrual cycle. Furthermore, the actual timing (usually given in day numbers from mentruation) of that biological stage varies, both between cycles of any single woman (inter-cycle) and between somen (inter-woman). Therefore, the appropriate ranges to use depend on how certain the actual biological stage can be estimated at any time.

 The levels denoted Average refer to the (arithmetic) means for hormone levels.

Wikipedia articles where media are used	View count (Feb 2015)
Estrogen	53793 [1] 🗗
Estradiol	27055 [2] 🗗
Menstrual cycle	53209 [3] 🗗
Ovulation	15584 [4] 🗗
Reference ranges for blood tests	23898 [5] 🗗
Progesterone	34680 [6] 🗗
Follicle-stimulating hormone	22883 [7] 🗗
Luteinizing hormone	23706 [8] 🗗

These images now appear in articles with a total of **254 808** readers per month.

## Average of 10 000 to 100 000 readers per month for each publication.

https://en.wikiversity.org/wiki/Wikiversity Journal of Medicine/View count

## Examples of submitted works

- Case studies (with informed consent)
   Preferably containing images.
- Reviews, supported by reliable sources
- Original research not to be used in Wikipedia
- Wikipedia content
  - Images
  - Article sections
  - Entire Wikipedia articles

## Publication of Wikipedia content



### What you get:

- Certification of having undergone peer review
- Can be cited in scholarly publications with a standardized reference format:

Uthman, Ed (2014). "<u>Tubal pregnancy with</u> <u>embryo</u>". *Wikiversity Journal of Medicine* 1 (2). <u>doi:10.15347/wjm/2014.007</u>. <u>ISSN 20018762</u>

## The process

Submission of work



Editorial board



**Publication** 

## ICMJE recommendations

International Committee of Medical Journal Editors

 Guidelines for journal structure, peer reviews and peer reviewers

www.icmje.org/icmje-recommendations.pdf

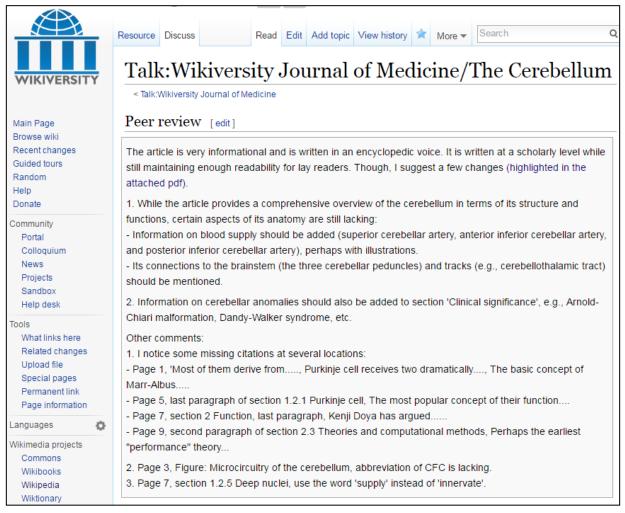
## Peer reviewers

### Criteria

- Have public contact information, or be willing to be contacted for verification.
- Have expertise in medicine
- Be willing to state any conflicts of interests.
- Not be part of the editorial board.

Found by searching among authors of articles of similar scope.

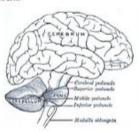
## Peer review example



#### Wikiversity Journal of Medicine/Cerebellum

User:Arcadius, Tooy I, Maralia, Fines Arup Niehen, et cerebellum.

Based on the Wikipedia article "Cerebellum" as of May-



Drawing of the human brain, showing corebellum and pena-

The cerebellum (Latin for "little brain") is a region of the brain that plays an important role in motor control. It may also be involved in some cognitive functions such as a tightly folded layer of cortex, with white matter undermention and language, and in regulating fear and pleasure responses,[11] but its movement-related functions are the most solidly established. The cerebellum does not initiate movement, but it contributes to coordination, precision, and accurate timing. It receives input from sensory systems of the spinal cord and from other parts of the brain, and integrates these inpats to fine-tune motor activity.[1] Cerebellar damage produces disorders in fine movement. called "microcones" or "microconputments". equilibrium, posture, and motor learning.[29]

Anatomically, the cerebellum has the appearance of a separate structure attached to the bottom of the brain, rucked underneath the cerebral hemispheres. Its cortical surface is covered with finely spaced parallel grooves, in The cerebellum is located in the posterior cranial founs. striking contrast to the broad irregular convolutions of. The fourth ventricle, pons and medulla are in front of the the cerebral cortex. These parallel grooves conceal the cerebellum. [31] It is separated from the overlying cerebrum fact that the cerebellar cortex is actually a continuous thin by a layer of leathery dura mater, the tentorium cerelayer of tissue tightly folded in the style of an accordion. belli; all of its connections with other parts of the brain Within this thin layer are several types of neurons with travel through the poor. Anatomists classify the cerebela highly regular arrangement, the most important being. Issue as part of the metencephalos, which also includes Purkinje cells and granule cells. This complex neural or- the pons; the metencephalon is the upper part of the

Authors: William Skaggs, User/Iztwor, User: bility, but almost all of its output passes through a set of SundyGeorgia, User:A314268, User:Nrets, User:DrKsy, small deep cerebellar nuclei lying in the interior of the

> In addition to its direct role in motor control, the cerebelhen is necessary for several types of motor learning, most notably learning to adjust to changes in sensorimotor relationships. Several theoretical models have been developed to explain sensorimoror calibration in terms of symptic plasticity within the cerebellum. Most of them derive from models formulated by David Marr and James Altus, which were based on the observation that each cerebeller Purkinie cell receives two dramatically different types of input: one type of input is made up of thousands of weak inputs from the parallel fibers; the other type is that of an extremely strong input from a single climbing fiber. The basic concept of the Marr-Albus theory is that the climbing fiber serves as a "reaching signal", which induces a long-leating change in the strength of parallel fiber inputs. Observations of lose-term depression in parallel fiber inputs have provided support for theories of this type, but their validity remains controver-

#### Structure

At the level of gross asseromy, the cerebellum consists of neath and a floid-filled ventricle at the base. At the microscopic level, there are four deep nuclei embedded in the white matter. Each part of the cortex consists of the same small set of neuronal elements, laid out in a highly stereotyped geometry. At ass intermediate level, the cerebellum and its auxiliary structures can be separated into several hundred or thousand independently functioning modules

#### 1.1 Gross anatomy

ganization gives rise to a massive signal-processing capa- rhombenorphalon or "hindbrain". Like the cerebral cor-

## **Editorial board**

Decides what works to include in the journal, based largely on peer reviews.

### 7 persons:

- 3 from Europe, 3 from America, 1 from Africa.
- 5 medical doctors, 1 medical student, 1 PhD.

Editorial board member	Academic status
Mikael Häggström	MD
Gwinyai Masukume ₽	MB ChB (UZ), Dip Obst(SA), MSc(Wits)
Lisa Kipersztok	MD, MPH
James Heilman	MD, CCFP-EM
Carl Fredrik Sjöland	med. kand.
Mike Nicolaije	BSc(med), BSc(bio-chem), BLS/AED instr €.
Guy Vandegrift	PhD, Assoc. Prof. Physics, Wright State University
Diptanshu Das	MBBS, MHSc (clinical child development) and PDCR

## Wiki advantage

- Authors can write their works directly online.
   Saves lots of editorial work.
- Editing is restricted when published.

## Model for journals in other fields



Prospects: Biology, technology etc.

## Contribute

- Publish an article. Credentials is not necessary.
- Peer reviewing of article submissions. Does require expertise in the subject at hand.
- Help preparing submitted articles
- Join the editorial board and share your ideas about journal management
- Currently looking for a treasurer

## Split from Wikiversity?

Possible names.

- "Wikipedia Journal"?
- "Wikimedia journal"?
- "Wiki Journal"?

## Questions?

www.wijoumed.org

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**Twitter: Wijoumed**