

# CARD·IA

AI-powered automated flashcard creation

# The Problem

(Medical) students are confronted with<sup>1</sup>:

- Immense volumes of study material
- Unformatted learning resources
- Exam-related stress and severe time constraints
- Time-consuming manual transformation of inefficient materials into ready-to-learn formats

Spaced repetition and active recall Tools are scientifically proven to be highly effective learning methods.

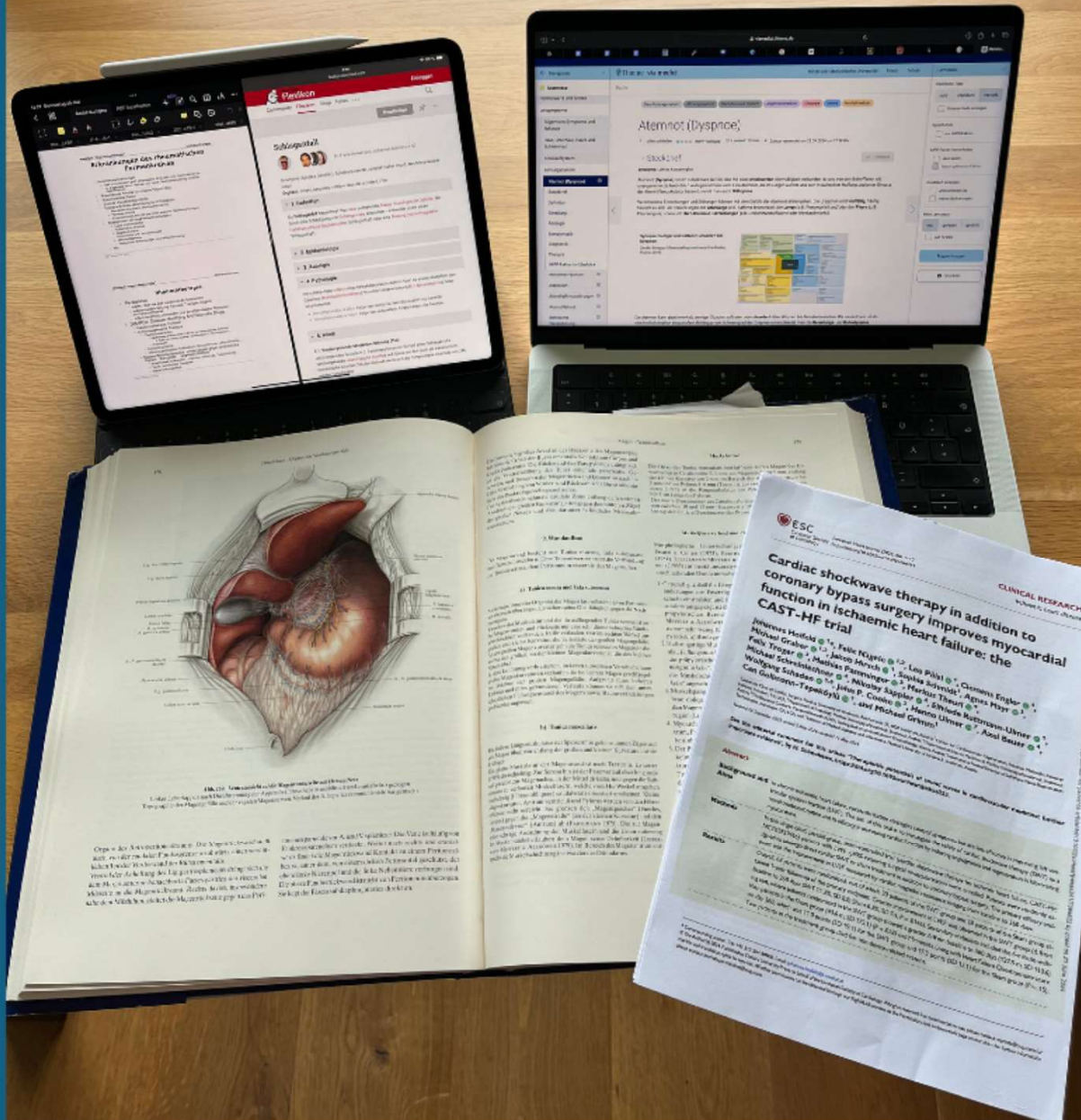
<sup>1</sup>According to the AOK study *Students Under Pressure* - Project Report, University of Heidelberg, 2016

CARD·IA



Anki

# CARD·IA



# The Solution

**CARD·IA as a bridge:** Our AI-powered tool automatically transforms materials that aren't yet optimized for learning, into spaced-repetition and active-recall-ready flashcards.

**Making modern learning methods practical for everyday use – without additional effort for students.**







**1.1 COMPLEMENT**The complement system primarily serves to fight bacterial infections. It works at several levels. It has a basic recognition function for many bacteria, can alert and recruit phagocytes, enhance visibility of bacteria to phagocytes and sometimes even lyse bacteria. The complement system can be activated by at least three separate pathways. The two evolutionary older pathways are the so-called "alternative" and the lectin pathways. Both are activated on many bacterial surfaces, contributing to innate immunity. The third pathway, which is mainly antibody-activated and hence part of the adaptive immune system, developed much later, but was identified first. Somewhat unfairly, it is therefore called the "classical pathway". The alternative pathway of complement activation starts with the spontaneous hydrolysis of an internal thioester bond in the plasma complement component C3 to result in C3(H<sub>2</sub>O). The changed conformation of C3(H<sub>2</sub>O) enables binding of the plasma protein factor B which is in turn cleaved into fragments Ba and Bb by the plasma protease factor D. While BY diffuses away, the C3(H<sub>2</sub>O)Bb complex is a soluble C3 convertase which proceeds to cleave a number of C3 molecules, resulting in small, soluble C3a and a larger fragment, C3b, which normally is rapidly inactivated. In case C3b is generated near a bacterial or cellular surface, it binds covalently to this surface. The process just described now repeats on the membrane: factor B attaches, to be cleaved by factor D. The further development depends on the nature of the surface in question. If C3b binds to the membrane of one of our own cells, the process of activation is inhibited by one of several different protective proteins, preventing damage to the cell (complement receptor 1/CR1, decay accelerating factor = DAF/CD55, factor H, membrane cofactor of proteolysis = MCP/CD46). Cooperating with inhibitors, protease factor I cleaves C3b to enzymatically inactive products (iC3b). A bacterial surface lacks these inhibitors, allowing the complement cascade to proceed. Facilitated by the bacterial surface, factor P (properdine) stabilizes the membrane-bound C3bBb complex. This complex, the C3 convertase of the alternative pathway, subsequently works as an amplifying tool, rapidly cleaving hundreds of additional C3 molecules. Soluble C3a diffuses into the surroundings, recruiting phagocytes to the site of infection by chemotaxis.

B I

Generate Cards

Export Cards

What is the primary function of the complement system?

The complement system primarily serves to **fight bacterial infections**.

What are the functions of the complement system in relation to bacteria?

The complement system works at **several levels**. The complement system has a basic **recognition function** for many bacteria, can **alert and recruit phagocytes**, enhance visibility of bacteria to phagocytes, and sometimes even **lyse bacteria**.

How many pathways can activate the complement system?

The complement system can be activated by at least **three separate pathways**.

What are the two older pathways that activate the complement system?

The two evolutionary older pathways are the so-called **alternative** and the **lectin pathways**.

What is the role of the alternative and lectin pathways in the immune system?

Both the alternative and lectin pathways are activated on many bacterial surfaces, contributing to **innate immunity**.

## Example Use Case: Anki

CARD·IA

*active recall & spaced-repetition ready*




Anki

StapelNeuÄndernSuchen

What are the functions of the complement system in relation to bacteria?

The complement system works at **several levels**. The complement system has a basic **recognition function** for many bacteria, can **alert and recruit phagocytes**, enhance visibility of bacteria to phagocytes, and sometimes even **lyse bacteria**.



1 Min.  
Nochmal

6 Min.  
Schwer

10 Min.  
Gut

3 Tg.  
Einfach

## Traction - Overview



225+ Beta-Users



43.000+ Flashcards  
created



2.161 hours saved  
(based on an estimated 3 minutes  
per card)

CARD·IA



# Strategic Needs

Structure & Strategic Sparring

Tech Development & Supervision

Marketing - Access to Target Users

Publishing / Knowledge Partners

Legal Support

Scientific Validation

B2B Go-to-Market Strategy

CARD·IA

## We are ready to grow

Join us in making it real.

For students, for educators, and ultimately for patients.



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