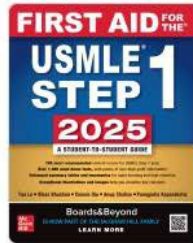


The McGraw Hill logo is a red square with the text "Mc", "Graw", and "Hill" stacked vertically in white. The background of the slide is a light gray grid of 3D cubes.

**Mc
Graw
Hill**

FIRST AID Forward Step 1 User Guide

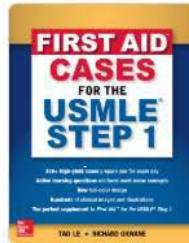
Books



Step 1, USMLE First Aid

[Continue Reading](#)

- Study the classic First Aid book, now updated in real-time right here on First Aid Forward.



Step 1, Cases: General Principles (USMLE)

[Start Reading](#)

- Work through patient cases like the ones you'll be presented with on exam day in the Cases: General Principles book.



Step 1, Clinical Pattern Recognition (USMLE)

[Start Reading](#)

- Master vignette-style questions with the Clinical Patterns recognition book.

Navigating the homepage

Navigating content by book

Click Start Reading/Continue Reading to open the book

Subject:

All

- ✓ All
- Biochemistry
- Cardiovascular
- Endocrine
- Gastrointestinal
- Hematology And Oncology
- Immunology
- Microbiology
- Musculoskeletal, Skin, And Connective Tissue
- Neurology And Special Senses
- Pathology
- Pharmacology

FIRST AID Forward USMLE Step 1

Get Support Alicia Cheng

First Aid Step One and Supplementals

Search in Step One and Supplementals

Step 1, USMLE First Aid

Continue Reading

Step 1, Cases: General Principles (USMLE)

Start Reading

Step 1, Clinical Pattern Recognition (USMLE)

Start Reading

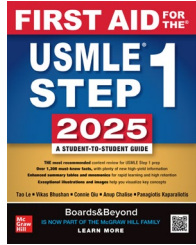
Subject:

All

<p>+</p> <p>Biochemistry</p>	<p>Progress: Not Started</p>	<p>Quiz Practice</p>	<p>82 High yield topics, 29 Case studies, 56 Clinical patterns, and 92 Videos</p>
<p>+</p> <p>Cardiovascular</p>	<p>Progress: Not Started</p>	<p>Quiz Practice</p>	<p>60 High yield topics, 26 Case studies, 41 Clinical patterns, and 75 Videos</p>
<p>+</p> <p>Endocrine</p>	<p>Progress: Not Started</p>	<p>Quiz Practice</p>	<p>64 High yield topics, 32 Case studies, 57 Clinical patterns, and 65 Videos</p>

Navigating content by subject

Click on the drop down menu to open the list of subjects



When browsing by **subjects**, click on a topic to be taken to it within the classic First Aid book.

Subject:
Biochemistry

⊖ Biochemistry
Progress: Not Started
Quiz Practice
82 High yield topics, 29 Case studies, 56 Clinical patterns, and 92 Videos

High Yield Topics in Biochemistry

ⓘ High yield topics are a curated list of targeted topics that align with the USMLE content blueprint.
✕

Show Cases
 Show Patterns
 Show Videos

Adenosine deaminase deficiency

📖 Adenosine deaminase deficiency
B&B [Video: Purine Metabolism](#)

B&B [Video: Imprinting](#)

Alkaptonuria

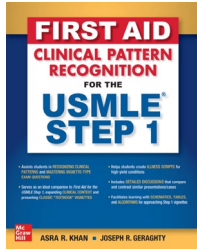
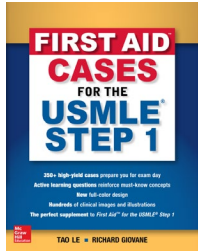
📖 Alkaptonuria
📄 [Case 1](#)

🔗 [Bone and joint abnormalities](#)

B&B [Video: Phenylalanine and Tyrosine](#)

Angelman syndrome

📖 Disorders of imprinting
🔗 [Intellectual disability](#)



To view the cases or patterns, be sure to select the appropriate check boxes

Subject:
Biochemistry

Biochemistry Progress: Not Started Quiz Practice 82 High yield topics, 29 Case studies, 56 Clinical patterns, and 92 Videos

High Yield Topics in Biochemistry

High yield topics are a curated list of targeted topics that align with the USMLE content blueprint.

Filter topics in Biochemistry Show Cases Show Patterns Show Videos

Adenosine deaminase deficiency

[Adenosine deaminase deficiency](#) B&B [Video: Purine Metabolism](#)
B&B [Video: Imprinting](#)

Alkaptonuria

[Alkaptonuria](#) [Case 1](#)
[Bone and joint abnormalities](#)
B&B [Video: Phenylalanine and Tyrosine](#)

Angelman syndrome

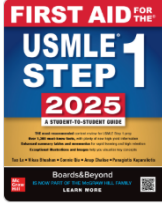
[Disorders of imprinting](#) [Intellectual disability](#)

Use the universal search bar at the top of the page to search across all of First Aid Forward –Step 1.

FIRST AID Forward USMLE Step 1 Get Support Alicia Cheng

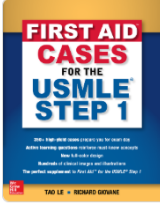
First Aid Step One and Supplementals

Search in Step One and Supplementals



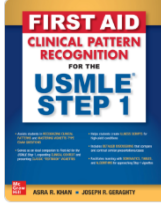
Step 1, USMLE First Aid

Continue Reading



Step 1, Cases: General Principles (USMLE)

Start Reading



Step 1, Clinical Pattern Recognition (USMLE)

Start Reading

Subject:

All

+ Biochemistry Progress: Not Started Quiz Practice **82** High yield topics, **29** Case studies, **56** Clinical patterns, and **92** Videos

Results are organized by book

- Classic First Aid
- Case Studies
- Clinical Patterns

The screenshot shows a search results window titled "Showing results for 'cell cycle'". The search bar contains "cell cycle" and a magnifying glass icon. Below the search bar, it says "Showing 20 of 60 results" with an information icon. There are three tabs: "Step One (20 results)" (highlighted with a red box), "Case Studies (20 results)", and "Clinical Patterns (20 results)". The selected tab shows a result from "21 Biochemistry > Cellular > Cell cycle phases". The text of the result includes: "Checkpoints control transitions between phases of cell cycle.", "M phase (shortest phase of cell cycle) includes mitosis (prophase, prometaphase, metaphase, anaphase, ...)", "This complex must be activated/inactivated at appropriate times for cell cycle to progress.", "From G 1, a cell might enter G 0, from which it reenters the cell cycle by crossing the R b and p 53", and "This leads to cell cycle arrest." Below this is a section titled "Cell cycle phases".

Explore the different subjects by clicking on the arrow icon

Showing results for "cell cycle"

cell cycle

Showing 20 of 60 results

Step One (20 results) Case Studies (20 results) Clinical Patterns (20 results)

21 Biochemistry > Cellular > Cell cycle phases

Checkpoints control transitions between phases of cell cycle.

M phase (shortest phase of cell cycle) includes mitosis (prophase, prometaphase, metaphase, anaphase,

This complex must be activated/inactivated at appropriate times for cell cycle to progress.

From G 1, a cell might enter G 0, from which it reenters the cell cycle by crossing the R b and p 53

This leads to cell cycle arrest.

Cell cycle phases


Explore the different subjects by clicking on the arrow icon

Showing results for "cell cycle" ×

cell cycle 

Showing 20 of 60 results 

 Step One (20 results)

 Case Studies (20 results)

 Clinical Patterns (20 results)



2.1 Biochemistry > Cellular >
Cell cycle phases



3.4 Hematology and Oncology > Pharmacology >
Cancer therapy—cell cycle



2.2 Immunology > Immune Responses >
Immunodeficiencies



3.9 Reproductive > Anatomy >
Seminiferous tubules



2.1 Biochemistry > Metabolism >
TCA cycle



3.9 Reproductive > Physiology >
Menstrual cycle



3.10 Respiratory > Pathology >
Lung cancer



3.4 Hematology and Oncology > Pharmacology >
Topoisomerase inhibitors

Reading

- Click on the Contents tab for more navigation options
- Use the next and previous buttons to flip through pages
- Search across the book using the built-in search functionality

The screenshot displays a digital reading interface for a chapter titled "Biochemistry: Cellular". The page content includes sections on "Cell cycle phases", "Regulation of cell cycle", "Cyclin-dependent kinases", "Cyclin-CDK complexes", "Tumor suppressors", and "Cell types". The "Cell cycle phases" section contains a paragraph with several words highlighted in blue, indicating a search function. The interface includes navigation tabs for "Contents" and "Next", a search bar, and a "BETA" badge.

Home / Step 1

Get Support Alicia Cheng

Contents Next

Biochemistry: Cellular

Search Aa

BETA

Cell cycle phases

Checkpoints control transitions between phases of cell cycle. This process is regulated by cyclins, cyclin-dependent kinases (CDKs), and tumor suppressors. M phase (shortest phase of cell cycle) includes mitosis (prophase, prometaphase, metaphase, anaphase, telophase) and cytokinesis (cytoplasm splits in two). G_1 is of variable duration.

Regulation of cell cycle

Cyclin-dependent kinases

Constitutively expressed but inactive when not bound to cyclin.

Cyclin-CDK complexes

Cyclins are phase-specific regulatory proteins that activate CDKs when stimulated by growth factors. The cyclin-CDK complex can then phosphorylate other proteins (eg, Rb) to coordinate cell cycle progression. This complex must be activated/inactivated at appropriate times for cell cycle to progress.

Tumor suppressors

p53 → p21 induction → CDK inhibition → Rb hypophosphorylation (activation) → G_1 -S progression inhibition. Mutations in tumor suppressor genes can result in unrestrained cell division (eg, Li-Fraumeni syndrome).

Growth factors (eg, insulin, PDGF, EPO, EGF) bind tyrosine kinase receptors to transition the cell from G_1 to S phase.

Cell types

Permanent

Annotation tool bar

To annotate, drag/select the text

You'll be able to:

- **Highlight**
- **Underline**
- **Add annotation box**
- **Add annotation circle**
- **Add Placemark**
- **Add Note**
- **Read selected text**
- **Enable AI Reader**

The screenshot shows a web page titled "Biochemistry: Cellular" with a section on "Cell cycle phases". A text block is highlighted: "Checkpoints control transitions between phases of cell cycle. This process is regulated by cyclins, cyclin-dependent kinases (CDKs), and tumor suppressors. M phase (shortest phase of cell cycle) includes mitosis (prophase, prometaphase, metaphase, anaphase, telophase) and cytokinesis (cytoplasm splits in two). G₁ is of variable duration." An annotation tool bar is overlaid on the text, containing icons for highlight, underline, add annotation box, add annotation circle, add placemark, add note, read selected text, and enable AI reader. A tooltip "Add annotation highlight" is visible over the highlight icon. The page also shows a navigation bar with "Step 1", "Get Support", and "Alicia Cheng".

Quiz Practice

First Aid Forward quizzes are case-style 'quick-hit' questions that are created to test your foundational knowledge of a particular topic to prepare you for the longer USMLE-style vignettes.

- The progress bar next to each subject summarizes your most recent quiz attempt.
- Click on Quiz Practice to see more details about the quiz

The screenshot shows the 'FIRST AID Forward' interface for 'USMLE Step 1'. At the top, there is a search bar containing 'cell cycle'. Below the search bar, three book covers are displayed with their respective titles: 'Step 1, USMLE First Aid', 'Step 1, Cases: General Principles (USMLE)', and 'Step 1, Clinical Pattern Recognition (USMLE)'. Each book cover has a 'Continue Reading' or 'Start Reading' button.

Below the books, there is a 'Subject:' dropdown menu set to 'All'. A list of subjects is shown, each with a progress bar, a 'Quiz Practice' button, and a summary of content:

Subject	Progress	Content Summary
Biochemistry	Progress: Not Started	82 High yield topics, 29 Case studies, 56 Clinical patterns, and 92 Videos
Cardiovascular	Progress: Not Started	60 High yield topics, 26 Case studies, 41 Clinical patterns, and 75 Videos
Endocrine	Progress: Not Started	64 High yield topics, 32 Case studies, 57 Clinical patterns, and 65 Videos

Quiz Practice

You can take a quiz in two modes:
Quiz Mode or Tutor Mode.

- In Tutor Attempt, you will see the correct answer to each question after submitting your answer. You'll also have a full explanation of the answers.

The screenshot displays the Biochemistry quiz interface. At the top right, there is a 'Close' button. The main title is 'Biochemistry'. Below it, the 'Session Details' section shows 'Number of questions: 61' and 'Number of Topics in a quiz: 82'. The 'Current Attempt' section features three circular progress indicators: 'Progress' at 0% Completed, 'Attempt' at 0, and 'Correct vs Incorrect' at 61 Total. A legend below the third indicator shows '0 Correct' (green square) and '0 Incorrect' (red square). At the bottom, there are two buttons: 'Start Quiz Attempt' and 'Start Tutor Attempt', followed by an information icon.

Biochemistry

Session Details

Number of questions: 61
Number of Topics in a quiz: 82

Current Attempt

Progress
0%
Completed

Attempt
0

Correct vs Incorrect
61
Total

0 Correct 0 Incorrect

Start Quiz Attempt Start Tutor Attempt ⓘ

Quiz Practice

Click "Next Question" to continue through the quiz.

Do note that in a quiz, you can only go forward through the quiz, click "Close Tutor" or "Close Quiz" to return to the homepage of FIRST AID Forward.

You can return to an unfinished quiz attempt at any time by clicking "Quiz Practice"

Question 1 of 61

Close Quiz

A 12-year-old girl is found to have Angelman syndrome, a genetic condition in which the paternal copy of a particular gene is silenced and the maternal copy of the same gene is deleted or mutated. Which of the following biochemical modifications is responsible for the lack of expression of the paternal gene copy?

- A) Polyadenylation
- B) Acetylation
- C) Methylation
- D) Ubiquitination

Next Question

Quiz Review

To review your previous quiz attempts, click on "View" under scoresheet.

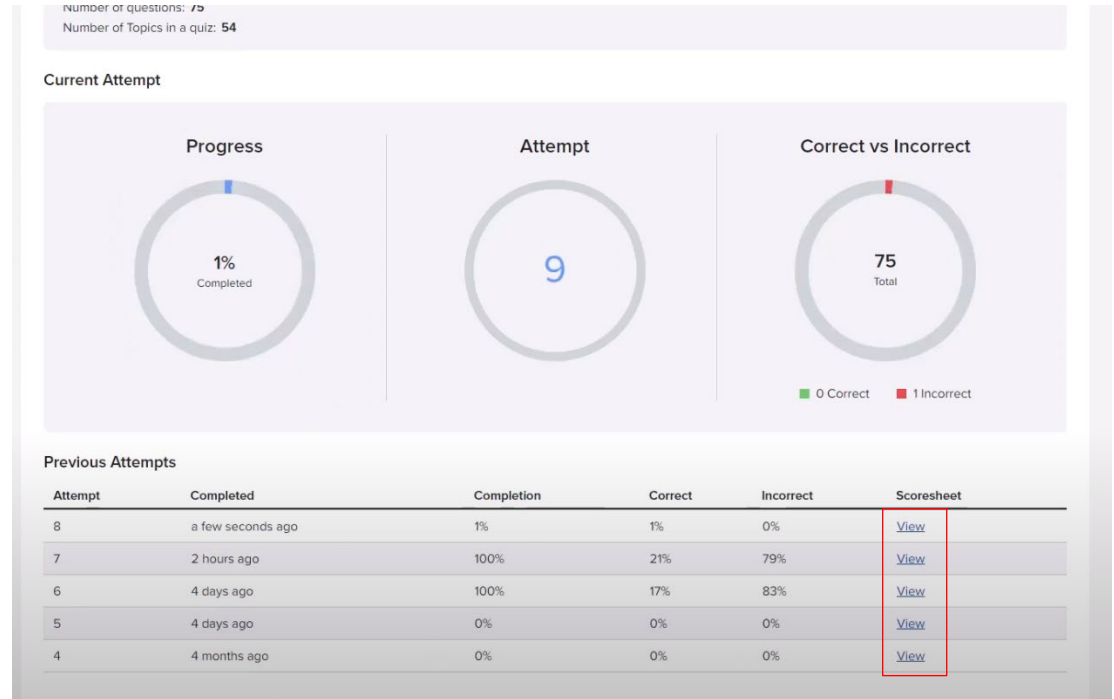
The scoresheet includes information and tools to help you maximize your study time.

It includes:

- your overall score on this quiz attempt
- your score per question
- your answer for each question
- the correct answer
- an explanation for each question's answer.

For dedicated review, use the **Sort by Topics** feature at the top of the page to narrow down questions by topic

You can also use **Filter** to filter by Correct or Incorrect answers to focus on those questions you need review the most.



Troubleshooting

For additional help, please click on the “Get Support” icon at the top of the page to be taken to our FAQs.

You may also wish to email us directly at: firstaidforwardsupport@mheducation.com

More resources on Access User Center: [First Aid Forward | Access User Center](#)

First Aid Forward

How do I login to First Aid Forward?

1. Go to firstaid.mheducation.com
2. Enter your email address and click Continue. Note: if your institution purchased a subscription for you, be sure to use your institutional email address (e.g. johnsmith@university.edu)
3. Click Send Magic Link
4. Check your email: you will have received an email from us with the subject line “Your McGraw Hill magic link”
5. Click on the magic link in the email to be logged into First Aid Forward

I know my login but am getting an error when trying to access my steps.

When students sign in to First Aid Forward with their institutional email, the system may suggest to select between Step 1 and Step 2 services.

If the user had not logged in for a while their license might have become inactive. In order for the license to become active the student should do the following:

- Go to the Step One URL directly: <https://firstaid.mheducation.com/step-one>
- Enter their institutional email and send themselves a Magic Link to get the license back
- Make sure you entered your email address correctly.
- Magic links expire after 24 hours. If you need a new magic link, go to

ANNOUNCEMENTS

No Upcoming Announcement

QUICK LINKS

- [Contact a Technical Support Representative](#)
- [Check the McGraw-Hill System Status](#)
- [Check Your Device Setup](#)
- [Get ALEKS Support](#)
- [Instructor Orientation](#)
- [Connect On Demand Webinars by discipline](#)
- [Info about moving courses online \(ALEKS\)](#)

[Student Resources](#)

[Registration & Access](#)

[Instructor Resources](#)

[Product Refunds](#)

[Administrator Resources](#)

[Contact Us](#)