

## CHAPTER TWO

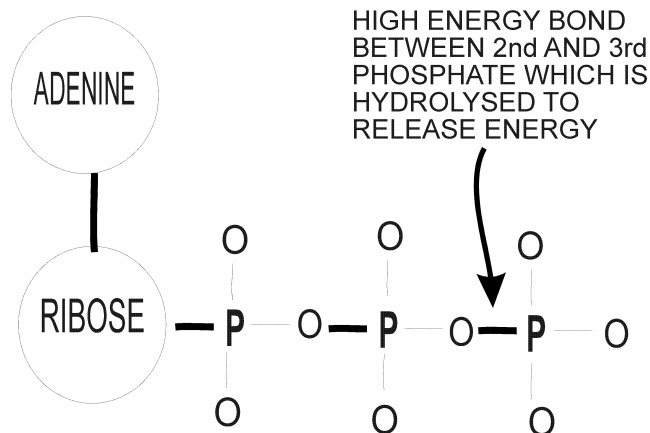
### ADENOSINE TRIPHOSPHATE (ATP)

**What molecule is most often used in cells as a source of energy for chemical bond formation ?**

Adenosine triphosphate (ATP).

**Which of the chemical bonds in ATP is usually broken to release energy ?**

The bond that is *usually* broken is the one between the 2<sup>nd</sup> and 3<sup>rd</sup> phosphates (leading to the formation of adenosine diphosphate (ADP) and a free inorganic phosphate group (Pi)).



**What is the problem with ATP and how is this problem overcome ?**

ATP is very unstable and breaks down spontaneously at a very fast rate. Therefore it must be synthesized very close to the site where it is going to be used. This means you can't just eat neat ATP as it would all be broken down before it got to its site of action in the cells. This problem is overcome by synthesizing ATP inside cells, only when it is required, using the energy contained in the chemical bonds in certain energy rich molecules that we consume in our diet.

**Name the two main molecules consumed in the diet as a source of energy ?**

Carbohydrates (such as glucose) and fatty acids. Amino acids, can also be used to synthesize ATP when carbohydrates and fatty acids are scarce (during starvation, for example).

**You can purchase the full 50 chapters of**

**GET TO GRIPS WITH **BIOCHEMISTRY****

**BOOK ONE**

**ENERGY METABOLISM, CARBOHYDRATES  
AND LIPIDS**

**AT**

**<http://get2grips.50webs.com>**

email: pmhbyrne@gmail.com

**Copyright ©2008 Paul M. Byrne.**

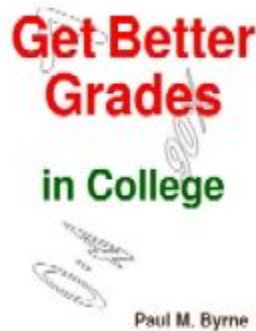
All rights reserved. No part of this book may be reprinted or reproduced or utilized in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying or recording, or in any information storage or retrieval system, without permission in writing from the author. All inquiries should be addressed to the author at pmhbyrne@gmail.com.

---

by the same author

# GET BETTER GRADES

## IN COLLEGE



Does it feel like you don't get the grades you should get for the work you have done and the amount you know ?

Would it be possible for you to get more marks, not just by trying to learn more but by making some simple changes to the way you present what you do know in your coursework and exam scripts?

<http://betterbgrades.50webs.com>

There are things other than a student's knowledge that examiners value when assigning grades.

This ebook has 33 chapters of suggestions on **how to improve your grades** with thirty three short chapters, each covering specific and practical techniques that will help you **GET BETTER GRADES**.

---

### Personalised Essay Correction

You will also find details on the website of how to have an essay you have written reviewed by the author and get further advice on incorporating some of the techniques in this book into your own work.