



# IIT Madras

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**English-I (Basic English)**  
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**Lecture-16**  
**Aspiration at the Syllable Initial position in English Words**

Welcome to the class. Today, we are going to look at aspirated sounds in words. You know, some sounds get aspirated in English at the initial position of a word.

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[p], [t], [k] ... Voiceless stop sounds  
- voice

•[p]	[p <sup>h</sup> ]	bilabial
•[t]	[t <sup>h</sup> ]	alveolar
•[k]	[k <sup>h</sup> ]	velar

[ -voice  
-asp ]      [ -voice  
+asp ]

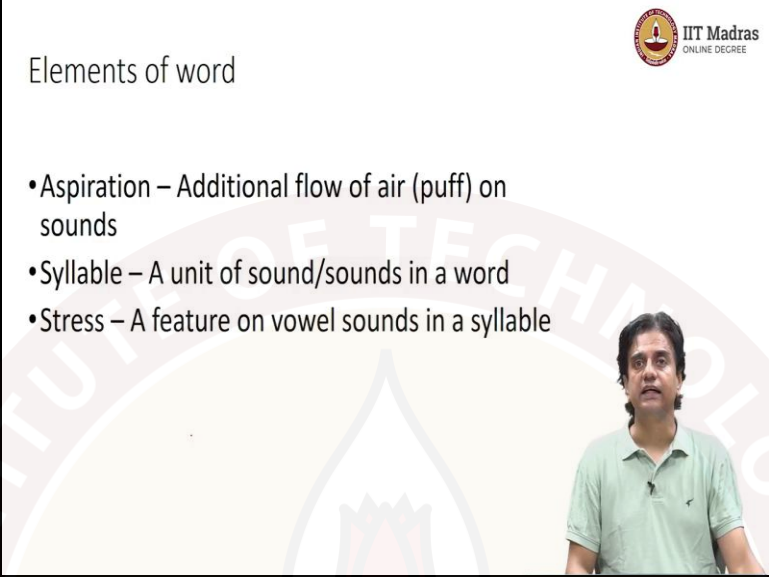
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Those sounds are p, t, k. These are voiceless stop sounds in English. They come from three different places of articulations; one is bilabial, the other is alveolar, and this one is a velar sound. So, each one of these sounds is from different places of articulations. Like, p is a bilabial sound, t is an alveolar sound and k is a velar sound. But they are all voiceless stops. There is no voicing in each one of them.

So, this is no voiced and no aspiration, and this is no voice but, plus aspiration. So, the point is some sounds like p, t, k in English words become aspirated like ph, th, kh at the initial position of the word. We have done this exercise; we have talked about these things. But, today we are

going to look at our discussions one more time and go slightly deeper into understanding how aspiration works.

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Elements of word

- Aspiration – Additional flow of air (puff) on sounds
- Syllable – A unit of sound/sounds in a word
- Stress – A feature on vowel sounds in a syllable

As you know, all these things are discussions about words. We are still discussing words, and one of the important things about words is when we know how to pronounce the word properly, it is going to make our speech impressive, and in return, it is going to make us confident. So what we are going to do? What we are doing in this process is, we are looking at certain features that come into play when we speak a word.

Today, we are looking at one specific thing in slightly more details. So, for understanding particularly this aspect of word in English, we need to keep three things in mind. One is aspiration, i.e., as you saw, aspiration is one specific feature of sounds. This is about the manner of articulation because this is what we know as places of articulation and then, what these features are according to their manners of articulations.

So, what we know is, in a certain condition, i.e., at the initial position in a word, this p becomes ph. So, aspiration simply means that in the production of the sound, there is little extra flow of air as air puff. When we pronounce that, you can put your palm in front of your mouth and say

the words. Say the sounds like ph, th, kh. And you can put a paper in front of you, and when you say ph, you will see paper moving away from you. So this is one aspect of the word.

The second thing is syllable, and the third thing is stress. We have talked about each one of these things separately. Now we are looking at how our understanding of these things is going to make our pronunciation impressive. So look at it.

Moving ahead, what do we know about syllable? A word is made of sounds, so it is a syllable. A syllable is a unit of a word, and it is made of sounds. So, a syllable could be one single sound also, and it could be a group of sounds, but eventually, it is a unit of a word. What is a unit in a word? It is made of sounds. And stress is a feature on a vowel sound in a syllable or a word. So, when we try to understand stress in English words, two very critical things that we need to know are, one, if there are two syllables in a word, one of the two will definitely be stressed syllable, i.e., anytime you have more than one syllable in a word, one of the syllables is going to be stressed and only one syllable will be stressed.

This is a rule of thumb in English words. In a monosyllabic word, when the word itself is just one syllable, and it is not possible to divide it further, then, if non- aspirated sounds are there in the initial position of the word, then they become aspirated.


Stress is a feature on a vowel sound in a syllable or a word. So, we need to understand these three things with clarity and look at the interplay of these things in a combined way. So, let us look at the words now.

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### Some English Words

- Pen
- Pin
- Pan
- Park


*Handwritten: /p<sup>h</sup>eɪn/*



*Handwritten: [-asp] → [t<sup>asp</sup>]/ -*

- Tan
- Truck
- Trick
- Team


*Handwritten: /t<sup>h</sup>æŋ/*



*Handwritten: <<VC*

- Car
- Can
- King
- Crush

*Handwritten: /k<sup>h</sup>æʃ/*



*Handwritten: <<VC*

We have discussed this earlier also. So, what we mean is, a voiceless stop, a voiceless, i.e., a voiced stop sound, will become voiceless, an un-aspirated stop will become aspirated. This is what we are talking about when they become aspirated at the initial position of a word. This is the rule. So, this is the initial rule. So, when we see a word like pen, pin, pan, park. In each one of these words, we have an unaspirated voiceless stop at the initial position of a word.

And this sound at the initial position of a word is going to be aspirated. So, each one of these words is going to carry this sound in it. So, it will sound like pen, pin, pan, park. In these words again because t sound is at the initial position of a word, so, it is going to be aspirated, and this word is going to sound tan, truck, trick, team. This is what is the aspiration. This is what happens to these sounds at the initial position it.

Sounds like k at the initial position, will also become aspirated and it is going to sound like car, can, king, crash. So, this is what happens to these words; keep in mind these are monosyllabic words. These words cannot be divided into two syllables. So, when we look at more words; so in these words, we see these are monosyllabic words and a syllable or a word is possible only when there is a vowel sound in it.

So, we see there is a vowel sound everywhere in this. So, now pay attention to these words, truck and trick. Pay attention to crush. What is the difference between these three words and the rest of

the words? In the rest of the words, right after these unaspirated stop, you have a vowel sound. So, this is C V C whereas these two are C C V C, meaning there is a cluster. Here again, we see C C V C, so when we see there is a cluster, and still, we see the first sound getting aspirated because the second sound in a cluster is a raw sound. Usually, this is a voiced sound. But, in the environment of a voiceless stop, this also remains a voiceless sound. It becomes a voiceless sound. So, just like a vowel sound and therefore, it allows aspiration at the initial position.

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• Cry	/k <sup>h</sup> raai/ r is voiceless
• Try	t <sup>h</sup>
• Plot	p <sup>h</sup>
• Clock	k <sup>h</sup>
• Crime	k <sup>h</sup>
• Tie	t <sup>h</sup>
• Town	t <sup>h</sup>
• Tank	t <sup>h</sup>

Handwritten notes: /k<sup>h</sup>raai/ r is voiceless, i is voiceless, < c v v

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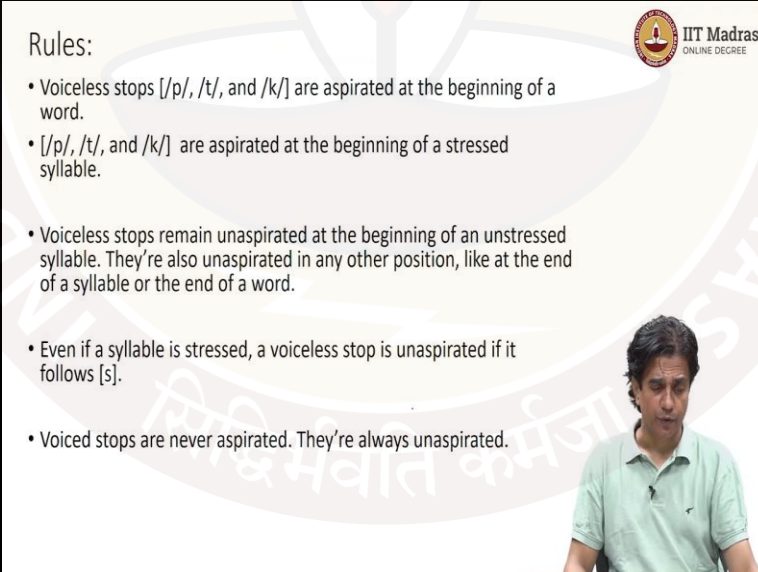
These words are going to show you that in a word like cry, how this word sounds. This word has k<sup>h</sup> raai. It is basically a C C V V, so this first sound k<sup>h</sup> is getting aspirated in the presence of r which eventually becomes voiceless in this environment, and therefore this gets aspirated. In this word like try, this sound is aspirated. In the word plot, this sound is aspirated.

Remember this one, r and l; both is voiceless. So, you see r in the word like cry and try. But in a word like plot, you see l sound. Clock, you see l sound. Again in a word like crime, you see r sound. So, p sound in plot also gets aspirated, k sound in clock also gets aspirated. Tie, it is a normal word, so this is aspirated. In monosyllabic words like town and tank, initial sounds are getting aspirated. That is a simple point.

If we want to summarize this, we need to pay attention to when we hear others. When we want to practice this, we need to keep in mind that these voiceless stops like p, t, k are becoming aspirated in English at the word-initial position. That is what is important to look at. So, pay attention to more words and make a list of 20 words. Take a pen, and a paper, make a list of 20 words, go through your memory, go through your vocabulary, or you can quickly look at words which begin with p, t or k sounds in a dictionary.

Then make a list of 10 each from these three sounds, you will have a series of 30 words and then see if those words are monosyllabic. If they are not, then find monosyllabic words and for practice make them sound like aspirated sounds. This will be a nice practice to do at this stage. This is one point to understand and in the process of our learning of pronunciation, our understanding of sounds in words and our effort in trying to find out underlying patterns, to see underlying rules with clarity so that we can apply these things when we speak English. This is going to yield a much better result, and you will see the impact of this in the back of your mind soon when you start speaking freely.

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**Rules:**

- Voiceless stops [/p/, /t/, and /k/] are aspirated at the beginning of a word.
- [/p/, /t/, and /k/] are aspirated at the beginning of a stressed syllable.
- Voiceless stops remain unaspirated at the beginning of an unstressed syllable. They're also unaspirated in any other position, like at the end of a syllable or the end of a word.
- Even if a syllable is stressed, a voiceless stop is unaspirated if it follows [s].
- Voiced stops are never aspirated. They're always unaspirated.

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So far, we can see that there are several parts of this rule. I will come back to that, and this is what I meant when we are going to look at it in details. The rule is voiceless stops such as p, t and k are aspirated at the beginning of a word. We have looked at this part. We have looked at these things earlier also, and last time we stopped right here. Now, we need to move a step



forward to understand these things in more detail so that we understand better nuances, and we understand this issue in a nuanced fashion to improve our speaking further.

P, t and k are aspirated at the beginning of the stressed syllable. So, the main idea is, if there is a monosyllabic word and there is a vowel sound right after these sounds in a word like pin, pan, tank then these vowel sounds are stressed anyway. They are allowed to be aspirated. But, what happens in words which have more than one syllable becomes very interesting to pay attention. So, let us observe some patterns to learn more about this issue.

Point one is very clear to us. We are going to look at 2. And then we will look at the issues where aspiration is ruled out. So, we are going to look at how p, t and k are also aspirated when they are not at the initial position of the word, but they are at the initial position of a syllable which is getting stressed in a word in English.

Our understanding of stress patterns in English is going to play an important role in our understanding of this aspiration so that we can revise our understanding of this aspiration and of course we can say voiceless stops get aspirated in the initial position of a word in English. In other words, p,t,k, are going to sound like ph, th, and kh at the initial position of a word in monosyllabic words or even in words with two syllables if these sounds come at the beginning of a word, they are going to get aspirated. If they are coming at the initial position of the first syllable of the word, they are going to get aspirated. That is for sure.

But in some cases, they get aspirated even when they are not at the initial position in the word. Rather they are elsewhere. But the rule is, if that syllable happens to be in a stressed syllable in English, then, stressed syllable would allow aspiration of these sounds as part of the second or third syllable as well. So, we are going to pay attention to those rules and, we will come back to this rule again.

But, we need to keep in mind that such stops like p, t, k they remain unaspirated at the beginning of an unstressed syllable. So, if you find these sounds at the syllable initial position in a word i.e., inside the word and the syllable initial position of a second or third syllable but if those



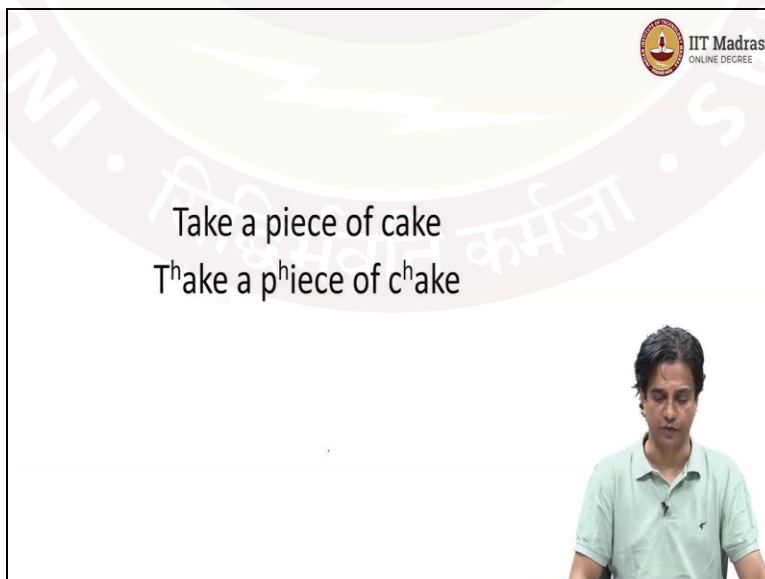
syllables are not as stressed, then the sounds remain unaspirated. Therefore one more time, I will stress this point that our understanding for clarity in syllabification and understanding which syllable out of multiples is the stress in the word is going to play a very crucial role in our speech, in how we sound.

So, what we need to know is all these rules apply only to unaspirated voiceless stops. Voiced stops? None of these rules applies. So, we do want to say this thing here, but it follows from the rule anyway that voiced stops are never aspirated. So, they always remain unaspirated in English, and these rules do not even apply to them. So we are just overstating this rule. So as you can see, this is an overstatement over a specification.

But the important point for us to look at is 1 and 2 and with a caveat of this number 3. So, having described this rule to you, I appeal to you not to memorize these rules. I want you to understand these rules by looking at the application of these things in the examples. And those examples will definitely make things clearer so that you can say these rules at any point by yourself. All you need to know is what aspiration is? What is a syllable? And what do you mean by stress?

So, as you know, stress is emphasis making a particular syllable stronger with a little bit more force when we speak. When we look at syllables, we are going to see that.


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The video frame displays a presentation slide. In the top right corner, there is a logo for IIT Madras Online Degree. The main text on the slide consists of two lines: "Take a piece of cake" and "T<sup>h</sup>ake a p<sup>h</sup>iece of c<sup>h</sup>ake". The speaker, a man in a light green shirt, is visible in the bottom right corner of the frame.


Before we go there, here is an interesting sentence. How do we read the sentence: Take a piece of cake. This is an imperative sentence; we will be looking at sentences little later. But there are three words in this sentence: take, piece and cake. In each one of these words, there is p, t and k at the initial position, and they are all aspirated. Just wanted to bring this sentence to you to see all three sounds are aspirated in one sentence.

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Aspiration in stressed syllable

• Potato	/p <sup>h</sup> o T <sup>h</sup> AE to/	(3)
• Hotel	/ho T <sup>h</sup> EL/	(2)
• Nepal	/ne P <sup>h</sup> AL/	(2)
• Intense	/in T <sup>h</sup> ENS/	(2)
• Intension	/in T <sup>h</sup> EN shan/	(3)
• deeper	/DIIP er/	(2)
• Institute	/IN stii tute/	(3)



Now let us look at words with more syllables, and here we are going to look at aspiration in stressed syllables. So, when we look at a word like potato. Now, keep in mind, I have tried to indicate stress on the syllable by using uppercase symbols; what we also know is capital letters. So, this word has three syllables, and I am indicating the number of syllables here in this margin. This word has three syllables; the first syllable has a sound p, it is at the word-initial position, so that is going to be aspirated if following the first rule.

Voiceless stops are aspirated at the beginning of the word. The second syllable is a stressed one, but it has t sound at the beginning of it. So it is going to be aspirated too. So, how does work in the word potato? So, this sound is also getting aspirated because it is at the initial position of a stressed syllable.

Look at the second word, hotel. The second syllable in this word is stressed, and it happens to be that t is at the initial position of this stressed syllable. So, this is going to be aspirated. I am indicating aspiration with this symbol h, and I am indicating stress with capital letters, uppercase symbols. So keeping this in mind, look at these words. I want you to look at one specific thing here while talking about stress; we talked about a rule that most nouns and adjectives are aspirated, are stressed, that is nouns and adjectives carry stress on their first syllable.

If there are two syllables in a word, and if the word happens to be either a noun or they fall in the category of adjectives, the first syllable will get stressed. That is the generic observation which we state as a rule as you can also understand that I have mentioned that this syllabification and stress on a syllable is quite innate and intuitive to speakers of English. So, we get these things about syllabification, how many syllables in a word, where the syllable boundaries are and which one of the syllables is stressed if we start learning English from very early in our age.


But if we are learning this language later, then it becomes a very tough thing to notice. We can still learn the language, we can still learn to speak much better, we can always improve, but it becomes difficult. Therefore, if we look at these patterns and we understand why these things happen, then probably it will be much easier to practice and improve these things for us to sound better. Moving ahead, so this noun hotel is an exception of that rule. This is a noun, but it has two syllables, the second syllable is getting stressed here, not the first one.

So this is a small counter example to the previous rule, but nonetheless, this is how it is spoken. So, we say /ho T<sup>h</sup> EL/, /ho T<sup>h</sup> EL/ because the second syllable is stressed. This word, it is the name of a country, Nepal. Many English speakers when they speak this word because it has two syllables, and the second syllable is stressed, and at the beginning of this stressed syllable, there is a p sound. So, they make it aspirated as /ne P<sup>h</sup> AL/, /ne P<sup>h</sup> AL/..

Now this word intense, the second syllable is getting stressed and in the initial position you have t, so that is getting aspirated. /in T<sup>h</sup> ENS/, /in T<sup>h</sup> ENS/. In the next word intension, you have a word with three syllables. This syllable is stressed, and a voiceless stop is at the initial position of the syllable. Therefore it is getting aspirated, so the way it sounds is /in T<sup>h</sup> EN shan/, /in T<sup>h</sup> EN


shan/. If you practice it this way, applying these things, then your pronunciation gets much improved.

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Aspiration in stressed syllables

- attention /aet T<sup>h</sup>EN shan/ (3)
- retain /rii T<sup>h</sup>AEN/ (2)
- retention /rii T<sup>h</sup>AEN shan/ (3)
- Impossible /im P<sup>h</sup>OS si bal/ (4)
- impatient im P<sup>h</sup>AE shant/ (3)



Keep in mind, some of some other things that we have seen here. As part of this rule, that voiceless stops remain unaspirated in any other position, i.e., at the end of the word or the end of a syllable, they do not get aspirated. So look at this. This word deeper, so first syllable is stressed. At the end of the syllable, there is a p sound, but this does not get aspirated. In Institute, the first syllable is stressed, the third syllable has a t sound at the beginning of the syllable, but it is not getting aspirated because this is not a stressed syllable. So we say /IN stii tute/, /IN stii tute/.

I will show you more such examples. So, moving ahead, when we want to observe words with more than one syllable and we see we are paying attention to stressed syllables, we see unaspirated voiceless stops getting aspirated at the syllable initial position of a stressed syllable. In all these words like attention, this is the stressed syllable t at the syllable initial position gets aspirated what becomes /aet T<sup>h</sup>EN shan/.

In this word retain, the second syllable has two syllables. The second syllable is stressed in the initial position of the syllable. We have a voiceless stop t, and it is getting aspirated, /rii T<sup>h</sup> AEN/. In a word like retention, three syllables are there. Here, the stressed syllable has voiceless

stop t, at the syllable initial position in a stressed syllable. Therefore, it gets aspirated, and we have a word sounding like /rii T<sup>h</sup> AEN shan/, /rii T<sup>h</sup> AEN shan/.

Impossible is word of four syllables where p is at the initial position of the stressed syllable. In this word, therefore, gets aspirated even though it is not at the initial position of a word. So, all these examples count as we are looking at the application of another part of the rule. Not just the first part, because they are not at the word-initial position. So, /im P<sup>h</sup>OS si bal/, /im P<sup>h</sup>AE shant/, /im P<sup>h</sup>AE shant/, three syllables p sound at the initial position of this stressed syllable, therefore it becomes /im P<sup>h</sup>AE shant/.

Now continuing these things, there are a lot of such words in English, and that indicates that it is a very productive pattern but a very robust rule, for us to observe. In the word department, the second syllable is stressed; p at the initial position is getting aspirated in this stressed syllable. Look at this word, competition. The third syllable is getting stressed, and therefore, t at the syllable initial position in this syllable is getting aspirated. /kom pii T<sup>h</sup>ii shan/, /kom pii T<sup>h</sup>ii shan/. Four syllables in this word.



The next two words are important for us to look at. We have discussed these towards earlier as well. The first one is decrease. Say this word has two syllables. If it is used as a verb, the second syllable is stressed. If it is used as a noun, the first syllable is stressed. But, it becomes important for what we are discussing now. When the second syllable is stressed, when this is used as a verb, then at the initial position of the stressed syllable we have k sound. Therefore it gets aspirated. So, it becomes /di K<sup>h</sup>RIIZ/. But, when it is used as a noun and the first syllable is stressed, then the same sound k at the initial position of an unstressed syllable is not getting aspirated. So, this word sounds like /DI kriiz/, /DI kriiz/. So, this follows from this rule that voiceless stops remain unaspirated at the beginning of an unstressed syllable.

So, in this word, decrease as a noun because /DI **kriiz**/ /DI **kriiz**/ remains unaspirated because the second syllable is unstressed. In this word institution again, this syllable is stressed; therefore, this term at the initial position of the stressed syllable is getting aspirated.

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Stress on 1<sup>st</sup> syllable – 2<sup>nd</sup> syllable unstressed and unaspirated

•Purple	/P <sup>h</sup> AR pal/
•Practice	/P <sup>h</sup> RAK tis/
•Circle	/SAR kal/
•Turtle	/T <sup>h</sup> AR tal/
•Sample	/SAM pal/
•Temple	/TEM pal/
•Happy	/HAP pi/



Now, look at some more examples, some more words to understand the application of these patterns clearly. Let me take you through these words to show you that in these words, we have stress on the first syllable. In each one of these words, we have stress on the first syllable of the word. All these words have two syllables, and the first syllable is stressed. So, how does this application work?

In a word like purple; look at this word. Stress on the first syllable. P at the initial position of the word gets aspirated because this is also stressed. So, application of the rule. But p at the initial position of the second syllable which is not as stressed, is not getting aspirated. So, it remains as /P<sup>h</sup> AR pal/. This is how we have put all these words in a way they sound. So, the next one is practice. The first syllable is stressed, the second syllable has t sounds in the initial position but not the stressed syllable, therefore no aspiration.

Circle, the second syllable is not stressed because the first one is a stressed k in the syllable initial position; no aspiration. Therefore we are saying that when the stress is on the first syllable; the second syllable is unstressed and unaspirated. What I mean to tell you is, the unaspirated sound remains unaspirated because it is an unstressed syllable. Circle, turtle, here t in the stressed syllable also because it is at the word-initial position, gets aspirated. But, t the other syllable which is not stressed, is not getting aspirated.




Sample, the first syllable is stressed. In the second syllable, we have a p sound, but it is not getting aspirated because it is not at the initial position of a stressed syllable. Temple, the first syllable, is stressed. The second syllable has a p sound but not getting aspirated. Look at this word happy. This word has two syllables; the first syllable is stressed. But, p in this syllable is not getting aspirated because a: it is at the end of the syllable and not at the beginning of the syllable. Therefore, it is not in the beginning position of the word. Therefore, it is not getting aspirated.

But the second p in the second syllable is also not stressed, is not aspirated because that syllable is not stressed. So, when you look at these examples, we see the rules, what we call as the rules are this kind of underlying pattern and the interplay of these three elements in the word like stress, syllables and aspiration. Together they are going to help us improve our pronunciation and understanding of English words.

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2<sup>nd</sup> syllable stressed – first sound aspirated

•Platonic	/plae ThoN ik/	(3)
•Iconic	/aai KhON ik/	(3)
•Atomic	/ae ThOM ik/	(3)
•Compassion	/kom PhAE shan/	(3)
•Complete	/Kom PhLIIT/	(2)



In these words, we have the second syllable again stressed because the second syllable the initial position has p, t and k in the stressed syllable. So, they are getting aspirated. Such words like platonic; you remember there is a pattern that in most of the words where you see the words ending in ik suffix, then in those words the penultimate syllable, the syllable before this ik sound



gets stressed. That is the rule to identify stress in a word when it has more than one syllable. So, /plae THoN ik/ we know that this syllable is stressed. But, it so happens that this has t sound in the initial position of this stressed syllable. Therefore it is getting aspirated. In iconic, k sound in this, the stressed syllable is getting aspirated in the word /aai KhON ik/. T sound at the syllable initial position of this stressed syllable in the word /ae ThOM ik/ is getting stressed. Hear this word again, /ae ThOM ik/, /ae ThOM ik/.

So this is the first syllable: just one sound, nucleus vowel. In atomic, there three syllables in this word. The second syllable has t sound at the initial position of a stressed syllable. Therefore it is getting aspirated. Compassion, again this is a stressed syllable, p at the initial position is getting aspirated in this word, and it sounds as /kom PhAE shan/. The next word, has p at the initial position of the stressed syllable, which is the second syllable and the word sounds as /Kom PhLIIT/, /Kom PhLIIT/, /Kom PhLIIT/.

Say these words to yourself several times following this pattern. They will have an effect on other words that you speak. They will help you make your understanding of aspiration stronger; they will make you understand words in a better way and they will also make you confident when you speak these words. Thus, we see that an understanding of stress patterns, syllabification and aspiration as a feature of sounds together, can help us a lot improve the way we speak.

Hope, you will be able to do some practice with this to be able to speak these words. You find a set of words with p, t, k at the initial position of a word, particularly in a monosyllabic word and see how they are getting aspirated and do some practice. I am positive that this will yield a much better result in you in learning to speak impressive English. Thank you.